

ENVIRONMENT PLAN



JACK-UP RIG PLUG AND ABANDONMENT



ExxonMobil



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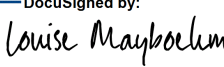
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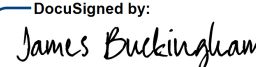
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DOCUMENT REVIEW AND UPDATE

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ABBREVIATIONS

Abbreviation	Definition
ADE	Area of Described Environment
AEP	Australian Energy Producers (formerly APPEA)
AHO	Australian Hydrographic Office
AHTS	Anchor Handling Towing Support
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ALARP	As Low As Reasonably Practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
API	American Petroleum Industry (API)
APPEA	Australian Petroleum Production and Exploration Association Limited
ASOG	Activity Specific Operating Guidelines
ATBA	Area To Be Avoided
BBMT	Barry Beach Marine Terminal
BIA	Biologically Important Area
BWM	Ballast Water Management
CASA	Civil Aviation Safety Authority
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CHARM	Chemical Hazard and Risk Management
CM	Control Measure
CMP	Control Measure (Project-specific)
CMPBW	<i>Conservation Management Plan for the Blue Whale 2015–2025</i> (Department of the Environment, 2015)
CO ₂	Carbon dioxide
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea 1972
DAWR	Department of Agriculture and Water Resources
DCCEEW	Department of Climate Change, Energy, the Environment and Water

Abbreviation	Definition
DP	Dynamic positioning
DWH	Deep Water Horizon
EMBA	Environment That May Be Affected
EMPs	Environmental Management Plans
EP	Environment Plan
EPBC	Environment Protection and Biodiversity Conservation
EPO	Environmental Performance Outcomes
EPS	Environmental Performance Standards
ERP	Emergency Response Plan
ESD	Ecologically Sustainable Development
ESG	Emergency Support Group
ESL	Energy source level
Esso	Esso Australia Resources Pty Ltd a.k.a EAPL
FDA	Food and Drug Administration
greenhouse gas	Greenhouse Gas
GoM	Gulf of Mexico
HCTS	Habitat critical to survival
HFC	High-frequency cetaceans
HLV	Heavy Lift vessel
HP	High Pressure
HSE	Health, Safety and Environment
IACS	International Association of Classification Societies
ICS	Incident Command System
IMCA	International Marine Contractors Association
IMO	International Maritime Organisation
IMS	Invasive Marine Species
IMT	Incident Management Team

Abbreviation	Definition
IPA	Indigenous Protected Areas
ITOPF	International Tanker Owners Pollution Federation Limited
JASCO	JASCO Applied Sciences (Australia) Pty Ltd
JRCC	Joint Rescue Coordination Centre
JUR	Jack-Up Rig
KEF	Key Ecological Feature
LFC	Low-frequency cetaceans
LOC	Loss Of Containment
LOWC	Loss Of Well Control
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
MDO	Marine Diesel Oil
MFO	Marine Fauna Observer
MEPC	Marine Environment Protection Committee
MLB	Marlin B
MMO	Marine Mammal Observer
MNES	Matters of National Environmental Significance
MOC	Management of Change
MODU	Mobile Offshore Drilling Unit
NaCl	Sodium chloride
NIW	Nationally Important Wetland
NMFS	National Marine Fisheries Service
NO ₂	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NRDA	Natural Resource Damage Assessment
OA	Operational Area
OCNS	Offshore Chemical Notification Scheme

Abbreviation	Definition
OGUK	Oil and Gas UK
OI	Operations Integrity
OIMS	Operations Integrity Management System
OPEP	Oil Pollution Emergency Plan
OPGGS	Offshore Petroleum and Greenhouse Gas Storage
OSAT	Operational Science Advisory Team
OSMP	Operational and Scientific Monitoring Plan
P&A	Plug and Abandonment
PAH	Polycyclic aromatic hydrocarbons
PBW	Pygmy blue whale (<i>Balaenoptera musculus brevicauda</i>)
PCE	Pressure Control Equipment
PK	Peak Sound Level
PLONOR	Poses Little or No Risk
PMS	Preventative Maintenance System
PMST	Protected Matters Search Tool
PSV	Platform Supply Vessel
PSZ	Petroleum Safety Zone
PTS	Permanent threshold shift
Ramsar	Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971
ROV	Remotely Operated Vehicle
RP	Recommended Practice
RRT	Regional Response Team
SCB	Source Control Branch
SCERP	Source Control Emergency Response Plan
SEL	Sound Energy Level
SELcum	Cumulative Sound Energy Level
SMPEP	Shipboard Marine Pollution Emergency Plan

Abbreviation	Definition
SOLAS	International Convention for the Safety of Life at Sea
SO _x	Sulphur oxides
SPL	Sound Pressure Level
SRW	Southern right whale (<i>Eubalaena australis</i>)
SSHE	Safety, Security, Health, Environment
TEC	Threatened Ecological Communities
TSS	Traffic Separation Scheme
TSSC	Threatened Species Scientific Committee
TTS	Temporary threshold shift
USBL	Ultra-Short Base Line
VHFC	Very-high-frequency cetaceans
WCDS	Worst-case discharge scenario
WOMP	Well Operations Management Plan

UNITS

Abbreviation	Unit
µg	Microgram
µPa	Micropascal
API	API gravity – The method used for measuring the density of petroleum as defined in American Petroleum Institute standards
bbbl	Standard barrel
dB	Decibel
g	Gram
Hz	Hertz
kg	Kilogram
kHz	kiloHertz
km	Kilometre
km ²	Square kilometre

Abbreviation	Unit
ksi	kilopound per square inch
m	Metre
m ²	Square metre
m ³	Cubic metre
MSTB	Thousand Stock Tank Barrels
MT	Metric tonnes
nm	Nautical mile
°C	Celsius Degrees
ppm	Parts per million
psi	Pounds per square inch
RMS	Root-mean-squared

1 Introduction

Esso Australia Resources Pty Ltd (Esso) is the operator of joint ventures for the exploration, development and production of oil and gas from Bass Strait, Victoria. The offshore Bass Strait production network is comprised of 421 wells, 19 offshore platforms and six subsea facilities that are inter-connected by over 800 km's of pipelines. Esso has been producing oil and gas in Bass Strait since 1969 and in this time has supplied over 50 percent of Australia's crude oil and liquids and over 40 percent of all of Eastern Australia's natural gas, hence contributing significantly to the national economy and supporting growth in industry and employment. Although the Bass Strait production network has been producing energy for more than 50 years, it remains today the largest single source of gas supply to the Australian east coast domestic market and has the potential to continue supplying one third of southeast Australia's domestic gas demand through to the end of this decade.

After delivering energy to Australia for over 50 years, many of the Bass Strait fields are now reaching the end of their productive life. This Plug and Abandonment (P&A) campaign will involve the P&A of 26 wells within the Bass Strait. The campaign will be undertaken using a Jack-Up Rig (JUR) to manage well integrity risks as described in Section two. All impacts and risks associated with these activities have been assessed and controls put in place to ensure the risks are, as low as reasonably practicable (ALARP) and acceptable.

1.1 Scope

Esso has developed this Environment Plan (EP) to manage the environmental impacts and risks associated with P&A of the 21 platform wells and five subsea wells, to be completed by a JUR at 12 locations in the Gippsland basin. The subsea wells are located at the Marlin-1, Whiptail-1A, Mulloway-1, Halibut-1 and East Pilchard-1 well sites, while the platform-based wells are at the Bream B platform and, Perch and Dolphin monotower platforms.

The scope also includes conductor driving activities at the Marlin B platform utilising a pile driving rig, as well as potential geotechnical activities at the Bream Subsea Exploration wells, Bream-2, Bream-3 and Bream-5 locations.

The 12 Operational Areas (OAs) for the purposes of this EP are defined by the 500 metre Petroleum Safety Zones (PSZ) around each platform and/or subsea location, while activity is taking place at that location. Note that only one PSZ will be activated at a time as the JUR moves to the relevant locations. Activities included in the scope of this EP are described in detail in Section two and include JUR positioning, P&A activities (including well head removal), conductor driving activities, potential geotechnical activities, support vessels, Remotely Operated Vehicle (ROV) activities and use of helicopters.

Activities excluded from the scope of this EP are vessels transiting to or from the OAs. These vessels are deemed to be operating under the *Commonwealth Navigation Act 2012* and not performing a petroleum activity.

The activity (as defined in Regulation 17 of the *Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (OPGGS (Environment) Regulations)) is defined as:

The physical process of plugging and abandoning a well, from the time that the JUR first jacks down its legs at each location until the time it jacks up its legs at each location.

The P&A program is part of the Bass Strait Decommissioning Project and subject to General Direction 817 issued under Section 574 of the *Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) in May 2021. Direction 2b requires Esso to plug or close, to the satisfaction of the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), all wells associated with the titles listed in Schedule 3, as soon as reasonably practicable and no later than 30 September 2027. This P&A program is an important step towards achieving compliance with General Direction 817.

1.2 Titleholder details

Esso, a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is the operator for the Gippsland Basin Joint Venture (GBJV) (Esso and Woodside Energy (Bass Strait) Pty Ltd). Esso receives services, including personnel, from its wholly owned subsidiary, Esso Australia Pty Ltd (EAPL), which is also a wholly owned subsidiary of ExxonMobil Australia Pty Ltd.

Petroleum Production Licences applicable to this EP are: VIC/L01, VIC/RL1, VIC/L03, VIC/L05, VIC/L09, VIC/L13, VIC/L14, VIC/L15, and VIC/L17 (as shown in Figure 2-1).

The nominated registered office for the proponent is as follows:

Esso Australia Resources Pty Ltd (ACN 091 829 819)
Level 9, 664 Collins Street, Docklands VIC 3008

The environmental contact for this activity is:

Louise Mayboehm, Offshore Risk, Environment and Regulatory Supervisor
Esso Australia Pty Ltd for and on behalf of Esso
Telephone: (03) 9261 0000
Email: EAPL.Regulatory@Exxonmobil.com

NOPSEMA will be notified of a change in titleholder, a change in the environmental contact or a change in the contact details for either the titleholder or the environmental contact in accordance with Regulation 23(3) of the OPGGS (Environment) Regulations.

1.3 Legislative framework

The principal offshore legislation for production activities beyond three nautical miles to the outer extent of the Australian Exclusive Economic Zone at 200 nautical miles is the OPGGS Act. The OPGGS Act is administered by NOPSEMA.

1.3.1 Relevant legislation

In accordance with Regulation 21(4), relevant Commonwealth, Victorian, New South Wales and Tasmanian Legislation as it applies to the operation of facilities and petroleum pipelines and projects is provided in Table 1-1.

No part of the activity is located within Victorian, New South Wales or Tasmanian State Waters (between the low water mark and the 3 nautical mile limit) and as such, no environmental approvals for the activity are required from the Victorian or other State governments. However, the State legislation would be relevant in the case of a large hydrocarbon release, as the Environment That May Be Affected (EMBA) intersects State Waters (see Section 3). Legislation relevant to marine pollution in Victoria, is detailed in Table 1-2. Legislation relevant to marine pollution in New South Wales, is detailed in Table 1-3. Legislation relevant to marine pollution in Tasmania, is detailed in Table 1-4.

Table 1-1 Key Commonwealth legislation

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
OPGGS Act OPGGS (Environment) Regulations	The OPGGS Act addresses all licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and recovery operations extending beyond the 3 nm limit. The OPGGS (Environment) Regulations ensures that petroleum activities are carried out in a manner; consistent with the principles of ecologically sustainable development set out in section 3A of the <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC Act); and by which the environmental impacts and risks of the activity will be reduced to ALARP and will be of an acceptable level.	All Gippsland facilities operate under an accepted EP in accordance with the OPGGS (Environment) Regulations.		NOPSEMA
<i>Environmental Protection and Biodiversity Conservation Act 1999</i> (EPBC)	<p>This Act focuses on environmental Matters of National Environmental Significance (MNES), streamlines the Commonwealth environmental assessment and approval process and provides an integrated system for biodiversity conservation and management of protected areas. MNES are world heritage properties; Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar) wetlands; listed threatened species and communities; migratory species under international agreements; nuclear actions and the commonwealth marine environment.</p> <p>On 28 February 2014, NOPSEMA became the sole designated assessor of petroleum and greenhouse gas (greenhouse gas) activities in Commonwealth Waters in accordance with the Minister for the Environment’s endorsement of NOPSEMA’s environmental</p>	<p>Relevant MNES are covered in Appendix A.</p> <p>EPBC Act Protected Matters Search Tool (PMST) utilised to identify relevant data.</p> <p>Approved conservation advice and management plans relating to listed species or threatened ecological communities have been identified and considered where appropriate.</p>	<p>1992 Convention on Biological Diversity & Agenda 21.</p> <p>Convention on International Trade in Endangered Species of Wildlife and Flora 1973.</p> <p>Japan/Australia Migratory Bird Agreement 1974.</p> <p>China/Australia Migratory Bird Agreement 1986.</p> <p>Republic of Korea-Australia Migratory Bird Agreement 2006.</p>	<p>Department of Climate Change, Energy, the Environment and Water (DCCEEW)</p> <p>For petroleum activities in Commonwealth Waters, NOPSEMA</p>

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
	<p>authorisation process under Part 10, Section 146 of the EPBC Act.</p>		<p>International Convention on Whaling 1946. Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention). Convention Concerning the Protection of the World Cultural and Natural Heritage 1972.</p>	
<p><i>Environment Protection (Sea Dumping) Act 1981</i></p>	<p>Act prevents the deliberate disposal of wastes (loading, dumping, and incineration) at sea from vessels, aircraft, and OAs.</p>	<p>Activities described in this plan are controlled to prevent actions that would contravene this Act. Relevant control measures, as well as the implementation strategy is described in this EP.</p>	<p>Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention). International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL).</p>	<p>DCCEEW</p>
<p><i>Australian Maritime Safety Authority Act 1990</i></p>	<p>Facilitates international cooperation and mutual assistance in preparing and responding to a major oil spill incident and encourages countries to develop and maintain an adequate capability to deal with oil pollution emergencies. Requirements are given effect through the Australian Maritime Safety Authority (AMSA).</p>	<p>Oil spill preparedness and response plans for dealing with a potential worst case scenario spill is described in Section 8.15 including consultation and coordination of activities with AMSA.</p>	<p>International Convention on Oil Pollution Preparedness, Response and Co-operation) 1990.</p>	<p>AMSA</p>

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
<i>Historic Shipwrecks Act 1976</i>	Protects the heritage values of shipwrecks and relics.	Heritage listed shipwrecks within the Bass Strait operations EMBA are identified in Appendix A.	Convention on Conservation of Nature in the South Pacific (APIA Convention) 1976. Agreement between Australia and The Netherlands concerning old Dutch shipwrecks and arrangement 1972. Convention on the Protection of the Underwater Cultural Heritage 2001.	DCCEEW
<i>National Environment Protection Council Act 1994</i> and <i>National Environment Protection Measures (Implementation) Act 1998</i>	Council develops (in conjunction with other state authorities) through the Intergovernmental Agreement on the Environment, consistent environmental standards to be adopted between states. These requirements take the form of National Environment Pollution Measures such as National Pollutant Inventory.	Reporting of emissions required by the National Pollutant Inventory is conducted annually for all Esso operated activities covered by this EP.		National Environment Protection Council
<i>National Greenhouse and Energy Reporting Act 2007</i>	Provides for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy production and energy consumption.	Annual submission covering Gippsland activities provided to Clean Energy Regulator.	United Nations Framework Convention on Climate Change, 1992, and the Kyoto Protocol, 1997.	Clean Energy Regulator

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
<i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>	Regulates ship-related operational activities and invokes certain requirements of MARPOL relating to discharge of noxious liquid substances, sewage, garbage, air pollution etc.	Activities described in this plan are controlled to prevent actions that would contravene this Act. Relevant control measures and the implementation strategy is described in this EP.	MARPOL, including the incorporation of all of the amendments that have been adopted by the Marine Environment Protection Committee (MEPC) and have entered into force, up to and including the 2000 amendments (as adopted by Resolution MEPC.89(45) 2000.	AMSA
<i>Biosecurity Act 2015(Cth) and the associated regulations including the Biosecurity Amendment (Biofouling Management) Regulations 2021 (Cth)</i>	<p>The Act is about managing diseases and pests that may cause harm to human, animal or plant health or the environment. It empowers authorities to monitor, authorise, respond to and control biosecurity risks for the movement of goods, vessels and people to prevent the introduction, establishment or spread of diseases or pests affecting human beings, animals, or plants.</p> <p>The Biosecurity Amendment (Biofouling Management) Regulations 2021 entered into force on the 15 June 2022 and requires that vessel operators provide information on biofouling management practices prior to arriving in Australia.</p>	The risk of introduction of Invasive Marine Species (IMS) is considered and managed for all vessels covered under this activity as described in this EP.	<p>International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004.</p> <p>United Nations Convention on the Law of the Sea 1982.</p> <p>Convention on Biological Diversity 1992.</p>	Department of Agriculture, Fisheries and Forestry
<i>Navigation Act 2012</i>	Regulates ship-related activities and invokes certain requirements of MARPOL convention relating to equipment and construction of ships.	Vessels operating within the permit areas comply with the requirements of the Act. Specifically in relation to environment protection,	MARPOL (certain sections). Convention on the International Regulations for	Department of Infrastructure, Transport, Regional Development,

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
		activities relating to control of discharges are discussed in this EP.	Preventing Collisions at Sea 1972 (COLREGs).	Communications and the Arts
<i>Coastal Waters (State Powers) Act 1980</i>	This Act transferred constitutional power over coastal waters, and title to seabed minerals within territorial limits, from the Commonwealth to the States.	Consultation, reporting and other matters impacting coastal waters are addressed with State authorities as described in this EP.		Geoscience Australia (Maritime Boundaries Advice Unit)
<i>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</i>	Regulates the use of harmful anti-fouling systems employed on vessels and their effects on the marine environment.	The risk of introduction of IMS is considered and managed for all vessels covered under this activity as described in this EP. This includes consideration of appropriate antifouling systems.	International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001.	AMSA
<i>Native Title Act 1993</i>	Allows for recognition of Native Title through a claims and mediation process and sets up regimes for obtaining interests in lands or waters where native title may exist.	Native Title within the Bass Strait operations Described Area is identified and recognised in Section 1.3.3		Attorney-General's Department
<i>Underwater Cultural Heritage Act 2018</i>	Provides for the protection of Australia's shipwrecks and has broadened protection to sunken aircraft and other types of underwater cultural heritage including Australia's Aboriginal and Torres Strait Islander Underwater Cultural Heritage in Commonwealth Waters. Projects that damage or interfere with a historic shipwreck or relic in Australian waters or with	There are no known shipwrecks, relics, submerged aircraft or associated artefacts relevant to this EP.		DCCEEW

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
	a submerged aircraft or associated artefacts in Commonwealth Waters requires a permit.			
<i>Civil Aviation Act 1988</i> and associated regulations including <i>Civil Aviation Safety Regulations 1998</i>	The Act sets up a Civil Aviation Safety Authority (CASA) with functions to regulate the safety of civil aviation, including the carrying of dangerous goods, airworthiness standards for aviation, maintenance; general operational and flight rules; and aerial application operations.	Rotary wing aircraft servicing the Gippsland facilities operate under the requirements of CASA. This contributes to safe operation and transport of goods thereby reducing risk of incidents which could have environmental impacts as described in this EP.	Chicago Convention 1944.	CASA

Table 1-2 Key Victorian legislation

Legislation	Coverage
<i>Environment Protection Act 1970</i>	This Act is the key Victorian legislation regulating emissions to the environment within Victoria (relevant for waste transfer and disposal, National Pollutant Inventory reporting). Administered by the Victorian Environment Protection Authority.
<i>Pollution of Waters by Oil and Noxious Substances Act 1986</i>	This Act is the Victorian state legislation giving effect to the requirements of MARPOL within State Waters. Administered by the Victorian Environment Protection Authority.
<i>Emergency Management Act 1986</i>	This Act ensures that the components of emergency management (prevention, response and recovery) are organised to facilitate planning, preparedness, operational coordination and community participation. Administered by Department of Justice and Community Safety Police and Emergency Management Victoria.

Legislation	Coverage
<i>Port Management Act 1995</i>	Under this Act all managers of local and commercial ports must prepare a Safety Management Plan and Environmental Management Plan (together known as SEMP). Administered by Victorian Ports Corporation (Melbourne).
<i>Marine Safety Act 2010</i>	This Act provides for safe marine operations in Victoria. Administered by Victorian Ports Corporation (Melbourne).
<i>Heritage Act 2017</i>	This Act is the Victorian state legislation which protects the heritage values of shipwrecks and relics within State Waters. Administered by the Heritage Victoria.
<i>National Parks Act 1975</i>	This Act provides for the protection, use and management of Victoria’s national and other parks. Administered by the Department of Energy, Environment and Climate Action (DEECA)
<i>Radiation Act 2005</i>	This Act provides for licencing for use and management of radioactive sources and conducting radiation practice (including radiation testing). Administered by the Victorian Department of Health.
<i>Catchment and Land Protection Act 1994</i>	This Act sets up a framework for the integrated management and protection of catchments. Administered by DEECA.
<i>Marine and Coastal Act 2018</i>	This Act provides for co-ordinated strategic planning and management for Victorian coast, the preparation and implementation of management plans for coastal Crown land and a co-ordinated approach to approvals for use and development of coastal Crown land. DEECA administers the Act.
<i>Land Titles Validation Act 1994</i>	This Act validates past acts, provides for compensation rights for the holders of native title which has been affected by past acts, and confirms certain existing rights. The Act also confirms ownership by the Crown of natural resources, the right to regulate water flows and existing fishing rights under State law; and public access to waterways, beds and banks of waterways, coastal waters, beaches and public areas.
<i>Dangerous Goods Act 1985</i>	This Act, the associated <i>Dangerous Goods (Storage and Handling) Regulations 2012</i> and the <i>Code of practice for the storage and handling of dangerous goods</i> (Victoria, 2013) promotes the safety of persons and property in relation to the manufacture, storage, transfer, transport, sale, purchase and use of dangerous goods and the import of explosives and other dangerous goods. The Act is administered by the Department of Treasury and Finance, WorkSafe Victoria.
<i>Offshore Petroleum and Greenhouse Gas Storage Act 2010</i>	This Act and Regulations apply to petroleum operations effectively within three nautical miles of the Victorian coast and address licensing, health, safety, environmental and royalty issues for offshore petroleum exploration and development operations. Waters greater than 3 nautical miles offshore from the coast are Commonwealth Waters and are covered by

Legislation	Coverage
<i>and Offshore Petroleum and Greenhouse Gas Storage Regulations 2011</i>	Commonwealth legislation (i.e. OPGGS Act). The Commonwealth and Victorian legislation are, by agreement, very similar with regard to petroleum.

Table 1-3 Key New South Wales legislation

Legislation	Coverage
<i>Protection of the Environment Operations Act 1997</i>	This is the main piece of New South Wales environmental legislation covering water, land, air and noise pollution and waste management. Administered by the New South Wales Environment Protection Authority
<i>Marine Pollution Act 2012</i>	This Act is the New South Wales state legislation giving effect to the requirements of MARPOL within State Waters. Administered by Transport for New South Wales.
<i>Ports and Maritime Administration Act 1995 No 13</i>	This Act provides for the provision of marine safety services and emergency environment protection services for dealing with pollution incidents in New South Wales waters. Administered by Transport for New South Wales.
<i>Heritage Act 1977 No 136</i>	This Act provides for the identification, registration and interim protection of items of State heritage significance (including shipwrecks within State Waters) in New South Wales. Administered by Heritage Council of New South Wales.
<i>National Parks and Wildlife Act 1974 No 80</i>	This Act provides for the care, control and management of all national parks, historic sites, nature reserves, conservation reserves, Aboriginal areas and game reserves, and the protection and care of native flora and fauna, and Aboriginal places and objects. Administered by the New South Wales Office of Environment and Heritage.
<i>Wilderness Act 1987 No 196</i>	This Act affords declared wilderness the most secure level of protection, requiring it to be managed in a way that will maintain its wilderness values and pristine condition by limiting activities likely to damage flora, fauna and cultural heritage. Administered by the New South Wales Department of Planning and Environment.
<i>Marine Parks Act 1997 No 64</i>	This Act provides for the protection and management of marine areas. Administered by the New South Wales Marine Parks Authority.

Table 1-4 Key Tasmanian legislation

Legislation	Coverage
<i>Environmental Management and Pollution Control Act 1994</i>	This is the primary environment protection and pollution control legislation in Tasmania. Administered by the Environment Protection Authority Tasmania
<i>Pollution of Waters by Oil and Noxious Substances Act 1987</i>	This Act is the Tasmanian state legislation giving effect to the requirements of MARPOL within State Waters. Administered by Environment Protection Authority Tasmania.
<i>Emergency Management Act 2006</i>	This Act establishes the Tasmanian emergency management framework which operates at state, regional and municipal levels.
<i>Marine and Safety Authority Act 1997</i>	This Act establishes Marine and Safety Tasmania as the authority responsible for the safe operation of vessels in Tasmanian waters and managing its marine facilities.
<i>Historic Cultural Heritage Act 1995</i>	This Act provides for the identification, assessment, protection and conservation of places having historic cultural heritage significance (including shipwrecks within State Waters) in Tasmania. Administered by Tasmanian Heritage Council and Historic Heritage Section of Parks and Wildlife Service Tasmania (shipwrecks).
<i>National Parks and Reserves Management Act 2002</i>	This Act provides for the management of national parks and other reserved land. Administered by the Parks and Wildlife Service Tasmania.

1.3.2 Federal Court decisions

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

1.3.3 Native Title

The landmark judgements in *Mabo v Queensland (No 2)* (1992) 175 CLR 1 was the first time Indigenous people's assertions of inherited rights to land were recognised by Australian law. The judgements of the High Court overturned the legal fiction of terra nullius (land belonging to no one), and acknowledged that Indigenous people had, and still have, laws and cultural practices, relating to land ownership, management and resource use that survived the process of British colonisation. This recognition of Indigenous 'native title' was then formally embraced in statutory law through the *Native Title Act 1993*.

On 22 October 2010, the Federal Court recognised that the Gunaikurnai people hold native title over much of Gippsland.

On the same day, the State entered into an agreement with the Gunaikurnai people under the *Traditional Owner Settlement Act 2010*. The agreement between the State and the Gunaikurnai people was the first to be made under the *Traditional Owner Settlement Act 2010*.

The agreement area extends from West Gippsland, near Warragul, east to the Snowy River and north to the Great Dividing Range. It also extends 200 m offshore. The determination of native title under the *Native Title Act 1993* covers the same area. Both the agreement and the native title determination only affect Crown land within this area.

As part of the agreement, the Gunaikurnai people will be able to undertake traditional activities such as hunting, fishing and gathering for traditional, non-commercial, domestic or communal purposes. This will involve recreational fishing and game hunting without a licence, as long as the Gunaikurnai people comply with relevant laws and regulations (including any catch limits).

Native title also provides the Gunaikurnai people with the right to negotiate with anyone seeking to carry out activities that might affect their rights. These rights do not impact access for existing users of the area, such as recreational fishers and hunters. The agreement does not provide the Gunaikurnai people with any commercial hunting, fishing or forestry rights.

However, in *Akiba on behalf of the Torres Strait Regional Seas Claim Group v Commonwealth of Australia* [2013] HCA 33, the High Court said that the native title claim group had the right 'to take for any purpose resources in the native title areas'. This meant that the native title holders could continue to sell and trade fish as they had done under their traditional laws. It was the first time that native title rights were found to include commercial rights.

As a prescribed body corporate under the *Native Title (Prescribed Body Corporate) Regulations 1999*, the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) is empowered to make native title decisions and negotiate agreements on behalf of the Gunaikurnai native title holders. GLaWAC must undertake a process of consultation and consent with native title holders as part of that agreement-making process.

The Gunaikurnai people lodged a native title determination application in the Federal Court on 9 December 2014 under the *Native Title Act 1993*. The application included the land and waters west of the Gunaikurnai determination area to the Tarwin West River, including Wilsons Promontory and Cape Liptrap. The Gunaikurnai name for this area, Yiruk, means rocky place. In September 2019, the Gunaikurnai withdrew the claim.

Esso acknowledges that, despite the claim withdrawal, the Gunaikurnai people hold strong connections to Yiruk with a long history of association with and caring for country, and they will continue to assert their rights and interests over this area.

As part of the Gunaikurnai people's native title, the following national parks and reserves are classified as Aboriginal title and subject to joint management between the State and the Gunaikurnai Traditional Owner Land Management Board:

- The Knob Reserve, Stratford
- Tarra Bulga National Park
- Mitchell River National Parks
- Lakes National Park
- Gippsland Lakes Coastal Park
- New Guinea Cave (within Snowy River National Park)
- Lake Tyers Catchment Area
- Buchan Caves Reserve
- Gippsland Lakes Reserve at Raymond Island
- Corringale Foreshore Reserve.

1.3.4 Sea Country

In April 2021, the Sea Country Indigenous Protected Areas (IPA) Program was established by the Australian Government to strengthen the conservation and protection of Australia's unique marine and coastal environments, while creating employment and economic opportunities for Indigenous Australians. Under the program, grant funding will be provided to Indigenous organisations to expand existing IPAs and create new IPAs. The Government will also support delivery of the program, including the development of a Sea Country IPA monitoring and evaluation system and the holding of a conference of Indigenous land and sea managers so they can share knowledge and experiences.

On 7 May 2022, ten successful Sea Country IPA consultation projects were announced, including the Nanjit to Mallacoota Sea Country IPA managed by GLaWAC.

The Nanjit to Mallacoota Sea Country IPA is in coastal waters of the Gippsland region in Victoria from Nanjit, east of Wilsons Promontory, to Mallacoota, on the Victoria/New South Wales border. The area comprises numerous marine and coastal parks and includes the Ramsar-listed Gippsland Lakes and Raymond Island.

A Nanjit to Mallacoota Sea Country IPA Management Plan is being developed to support First Nations people to identify cultural and natural values, including the condition and any threats to these values, and plan for the conservation and management of these values.

GLaWAC is partnering with Monash University and the Arthur Rylah Institute to undertake specific research into culturally significant areas and species that occur along the coast.

While the plan is being developed, Esso has anticipated the values and sensitivities regarding Sea Country to potentially include:

- geographical features
- places with cultural and/or spiritual significance
- flora and fauna species that have a cultural and/or spiritual significance
- cultural harvesting and use of flora and fauna.

Esso has registered an interest to participate in the Nanjit to Mallacoota Sea Country IPA consultation project and understands that once the First Nations peoples' consultation phase has completed, commercial participants will be approached.

1.4 Environment Plan Summary

This EP has been structured in accordance with the Offshore Petroleum and Greenhouse Gas (Environment) Regulations 2023 Regulations 35(6) and 35(7) Summary of the EP is as outlined in Table 1-5.

Table 1-5 Environment Plan process phases, applicable OPGGS (Environment) Regulations and relevant sections of this Environment Plan

EP Summary Requirement	Section of EP
The location of the Activity	Section 2.1
A description of the receiving environment	Section 3 and Appendix A.
A description of the activity	Section 2
Description of the environmental impacts and risks	Section 6 and 7
The control measures for the activity	Section 6 and 7 and Appendix H.
The arrangement for ongoing monitoring of the titleholder’s environmental performance	Section 8.10
Response arrangements in the oil pollution emergency plan (OPEP)	Attachment 2
Consultation already undertaken and plans for ongoing consultation	Section 4 and Section 4.5
Details on the titleholder’s nominated liaison person for the activity	Section 1.2

2 Description of the activity

The P&A campaign will utilise a JUR to permanently abandon the wells by installation of cement plugs as barriers, followed by the removal of trees and wellheads. Conductors will be severed at or below the mudline and will be removed.

The EP also considers conductor installation activities that will occur at the Marlin B platform and potential geotechnical survey work that will be conducted at Bream-2, Bream-3 and Bream-5 locations.

2.1 Location

The P&A campaign will take place in Production Licences VIC/L01, VIC/RL1, VIC/L03, VIC/L05, VIC/L09, VIC/L13, VIC/L14, VIC/L15, and VIC/L17 (as shown in Figure 2-1), located at the edge of the Gippsland Basin of the eastern Bass Strait.

Activities will all be undertaken within and nearby the Bass Strait Area To Be Avoided (ATBA). Ships in excess of 200 gross tonnage should avoid the area due to the high concentration of offshore facilities and navigation hazards for unauthorised vessels. The ATBA is described in Schedule 2 of the OPGGS Act. The area excludes waters not within the coastal waters of Victoria and not within a PSZ. The approximate size of the ATBA is 5362 km². The ATBA is described in the Mariner's Handbook for Australian Waters (AHP20) and marked on charts ENC AU240140/PNC Aus 357.

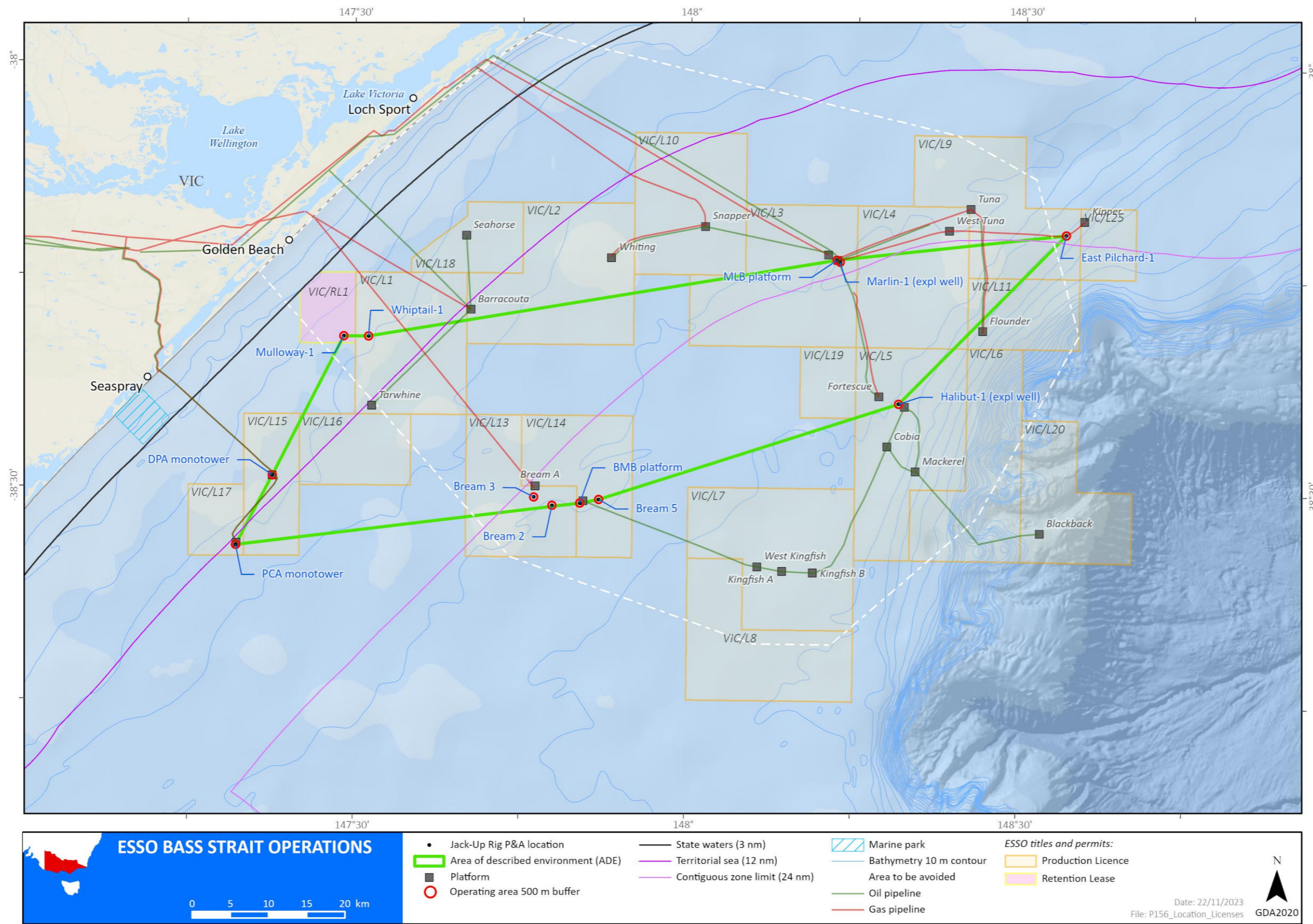


Figure 2-1 JUR P&A locations, Gippsland Basin

Table 2-1 Location details of JUR P&A activity locations

Well	Associated facility	Licence	Latitude	Longitude	Northing MGA55 (m)	Easting MGA55 (m)	Water depth (m)	Distance to nearest onshore location (km, direction, location)
P&A activities								
Mulloway-1	Subsea exploration well	VIC/RL1	38° 19' 19" S	147° 29' 06" E	5758189	542291	36	14.5 km, NW, Golden Beach
Whiptail-1A	Subsea exploration well	VIC/L1	38° 19' 25" S	147° 31' 14" E	5758154	545507	38	16.3 km, NW, Golden Beach
Perch-3	Perch monotower	VIC/L17	38° 34' 09.46" S	147° 19' 21.36" E	5730967	528103	42	24.3 km, NNW, Seaspray
Perch-4		VIC/L15	38° 34' 09.49" S	147° 19' 21.34" E	5730966	528102	41.3	
Dolphin-2	Dolphin monotower	VIC/L15	38° 29' 14.48" S	147° 22' 38.92" E	5740041	532921	38	20.3 km, NW, Seaspray
Dolphin-A3		VIC/L15	38° 29' 14.50" S	147° 22' 38.91" E	5740040	532921	37.8	
Halibut-1	Subsea exploration well	VIC/L5	38° 23' 52" S	148° 19' 02" E	5749230	614899	73	63.1 km, NNW, Lake Tyers Beach
Marlin-1	Subsea exploration well	VIC/L3	38° 13' 58" S	148° 13' 38" E	5767772	607264	60	43.1 km, NNW, Lake Tyers Beach
East Pilchard-1	Subsea exploration well	VIC/L9	38° 11' 48.63" S	148° 33' 47.34" E	5771188	636876	91.3	44.6 km, N, Marlo
Bream Well #1	Bream B platform	VIC/L13/ VICL14	38° 31' 05.38" S	147° 50' 21.38" E	5736356	573165	61	51.1 km, NW, Paradise Beach
Bream Well #2			38° 31' 05.39" S	147° 50' 21.47" E	5736356	573167		
Bream Well #3			38° 31' 05.39" S	147° 50' 21.56" E	5736356	573169		
Bream Well #4			38° 31' 05.45" S	147° 50' 21.38" E	5736354	573164		
Bream Well #5			38° 31' 05.45" S	147° 50' 21.46" E	5736354	573166		
Bream Well #6			38° 31' 05.45" S	147° 50' 21.54" E	5736354	573168		
Bream Well #7			38° 31' 05.45" S	147° 50' 21.62" E	5736354	573170		
Bream Well #8			38° 31' 05.51" S	147° 50' 21.37" E	5736352	573164		
Bream Well #9			38° 31' 05.51" S	147° 50' 21.46" E	5736352	573166		
Bream Well #10			38° 31' 05.52" S	147° 50' 21.54" E	5736352	573168		
Bream Well #11			38° 31' 05.52" S	147° 50' 21.62" E	5736352	573170		
Bream Well #12			38° 31' 05.58" S	147° 50' 21.37" E	5736350	573164		
Bream Well #13			38° 31' 05.58" S	147° 50' 21.46" E	5736350	573166		
Bream Well #14			38° 31' 05.58" S	147° 50' 21.53" E	5736350	573168		
Bream Well #15			38° 31' 05.58" S	147° 50' 21.62" E	5736350	573170		

Well	Associated facility	Licence	Latitude	Longitude	Northing MGA55 (m)	Easting MGA55 (m)	Water depth (m)	Distance to nearest onshore location (km, direction, location)
Bream Well #16			38° 31' 05.62" S	147° 50' 21.37" E	5736349	573164		
Bream Well #17			38° 31' 05.64" S	147° 50' 21.46" E	5736348	573166		
Conductor driving								
Marlin B	Marlin B platform	VIC/L3	148.2210219	-38.2294433	5768023	606870	59.5	42.9 km, NNW, Lake Tyers Beach
Geotechnical investigations								
Bream 2	Bream B platform	VIC/P13/VIC/P14	-38.52112788	147.7975027	5736061	569521	58.2	48.8 km, NW, Golden Beach
Bream 3			-38.51145809	147.7699951	5737154	567132	56.4	46.4 km, NW, Golden Beach
Bream 5			-38.5137522	147.8676464	5736824	575643	59.6	52.8 km, NW, Paradise Beach/Golden Beach

2.2 Timing of the activities

The activity is due to commence in the fourth quarter of 2024 with the earliest date of arrival expected to be 1 October 2024 with an estimated total program duration of approximately 12-16 months with the expected completion at the start of 2026. Therefore, pending timing of EP acceptance, the EP will be valid for three years (2024, 2025 and 2026).

The activity will involve moving the rig to the various locations shown in Figure 2-1. The rig will remain at each location while it completes the relevant activities. An approximate timeline and sequence are shown below:

- Bream B platform well abandonments – 5-6 months
- subsea well abandonments (Marlin-1, Halibut-1, Whiptail-1A, East Pilchard-1, Mulloway-1) – 3-4 months
- Perch and Dolphin platform abandonments – 2-3 months
- Marlin B conductor installation – 15-30 days
- geotechnical activities from the JUR (if required) – 3 days
- total transits between locations – approximately 15-30 days.

These timings are approximate only as dates will depend on handover of the rig from the prior operator contract and duration impacted by weather or equipment downtime delays.

2.3 Current status

Table 2-2 summarises the details of the 26 wells to be P&A as part of this activity. As noted in Section 2.4, all of these wells are currently shut-in (i.e. not producing) with isolations in place.

Table 2-2 Well details

Specifications	Mulloyway -1	Whiptail -1A	Perch-3	Perch -4	Dolphin -2	Dolphin -A3	Halibut -1	Marlin -1	East Pilchard -1	Bream Well #1	Bream Well #2	Bream Well #3	Bream Well #4	Bream Well #5	Bream Well #6	Bream Well #7	Bream Well #8	Bream Well #9	Bream Well #10	Bream Well #11	Bream Well #12	Bream Well #13	Bream Well #14	Bream Well #15	Bream Well #16	Bream Well #17
Year drilled	1989	1985	1989	1995	1989	1997	1967	1966	2001	1997		1996	1997												1996	2005
Month drilled	Feb	Sept	Oct	Feb	Oct	Sept	Sept	Apr	Aug	Jan	Jun	Nov	Mar	Jul	Feb	Mar	Aug	Apr	Jul	Jun	May	Jan	Mar	Dec	Jul	Jul
Drilling rig/vessel	Southern Cross		Giant	HHW*	Giant	SFP**	Glomar III		Ocean Bounty	SFP														Ensco 102		
Operator of drilling rig/vessel	South Seas Drilling		Maersk	Reading & Bates	Maersk	Santa Fe	Global Marine		Diamond Offshore	Santa Fe														Ensco		
Well depth (m) TD	1721	2821	1332	2052	1322	1373	3051	2586	3138	2350	2385	2887	2950	3618	2223	2632	2707	3150	2332	3105	3570	2580	2300	2665	2641	4955
Perforated/ tested (Y/N)	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hydrocarbon formerly produced	Never produced (oil discovered)		Oil and gas				Oil	Oil & gas	Never Produced (Gas Discovered)	Oil and gas																
Well control																										
Wellhead pressure (assuming cement plug has integrity issue) at mudline (e.g. 3230 psi (gas)/1354 psi (oil))	1531 psi (gas) 717 psi (oil)	1533 psi (gas) 718 psi (oil)	1296 psi (gas) 613 psi (oil)	1297 psi (gas) 614 psi (oil)	1416 psi (gas) 683 psi (oil)	1423 psi (gas) 688 psi (oil)	2758 psi (gas) 1402 psi (oil)	1547 psi (gas) 732 psi (oil)	3219 psi (gas) 1688 psi (oil)	2153 psi(gas) 1002 psi(oil)	2084 psi (gas) 952 psi (oil)	2133 psi (gas) 996 psi (oil)	2156 psi (gas) 1005 psi (oil)	2156 psi (gas) 1005 psi (oil)	2142 psi (gas) 1000 psi (oil)	2151 psi (gas) 1003 psi (oil)	2084 psi (gas) 954 psi (oil)	2171 psi (gas) 1011 psi (oil)	2154 psi (gas) 1005 psi (oil)	2159 psi (gas) 1007 psi (oil)	2154 psi (gas) 1005 psi (oil)	2152 psi (gas) 1004 psi (oil)	2144 psi (gas) 1001 psi (oil)	2156 psi (gas) 1005 psi (oil)	2188 psi (gas) 1019 psi (oil)	2084 psi (gas) 972 psi (oil)
Seawater overbalance (psi)	1963	1964	1646	1645	1766	1772	3266	1966	3690	2775	2728	2739	2772	2773	2752	2765	2723	2794	2770	2777	2770	2766	2755	2773	2817	2680

Specifications	Mulloy -1	Whiptail -1A	Perch-3	Perch -4	Dolphin -2	Dolphin -A3	Halibut -1	Marlin -1	East Pilchard -1	Bream Well #1	Bream Well #2	Bream Well #3	Bream Well #4	Bream Well #5	Bream Well #6	Bream Well #7	Bream Well #8	Bream Well #9	Bream Well #10	Bream Well #11	Bream Well #12	Bream Well #13	Bream Well #14	Bream Well #15	Bream Well #16	Bream Well #17	
Annulus (e.g. 9-5/8" x 13-3/8" (455bbls))	13 3/8" A Annulus		7 5/8" A Annulus				9 5/8"			7"																	
Volume below shallow cement plug (bbls)	283	297	71	50	61	48	563	313	390	265	238	339	327	413	250	300	285	378	265	355	405	290	263	301	259	468	
Well status																											
Reservoir cement plug	Nil	Nil	Yes	Yes	Yes	Yes	Nil	Yes	Yes	Yes	Nil	Yes	Yes	Yes	Yes	Yes	Nil	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Nil	Nil	
Shallow plug	Nil																										
ROV (or planned) inspection (month and year)	October 2023		NA				October 2023			NA																	

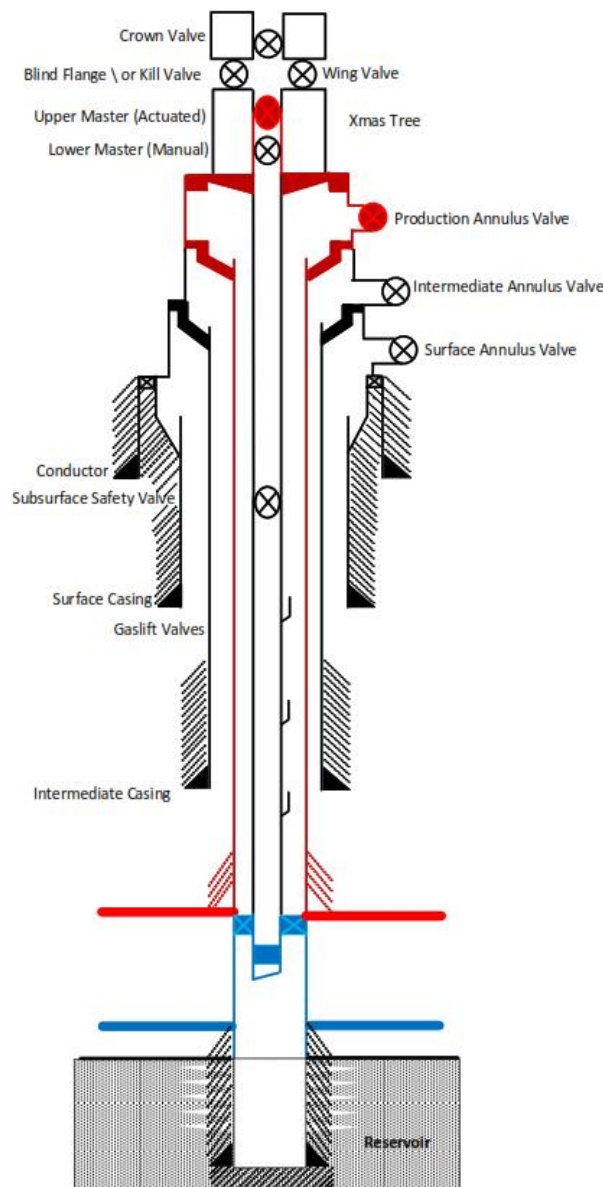
HHW* = Harvey H Ward

SFP** = Santa Fe Parameswara

2.4 Well schematics

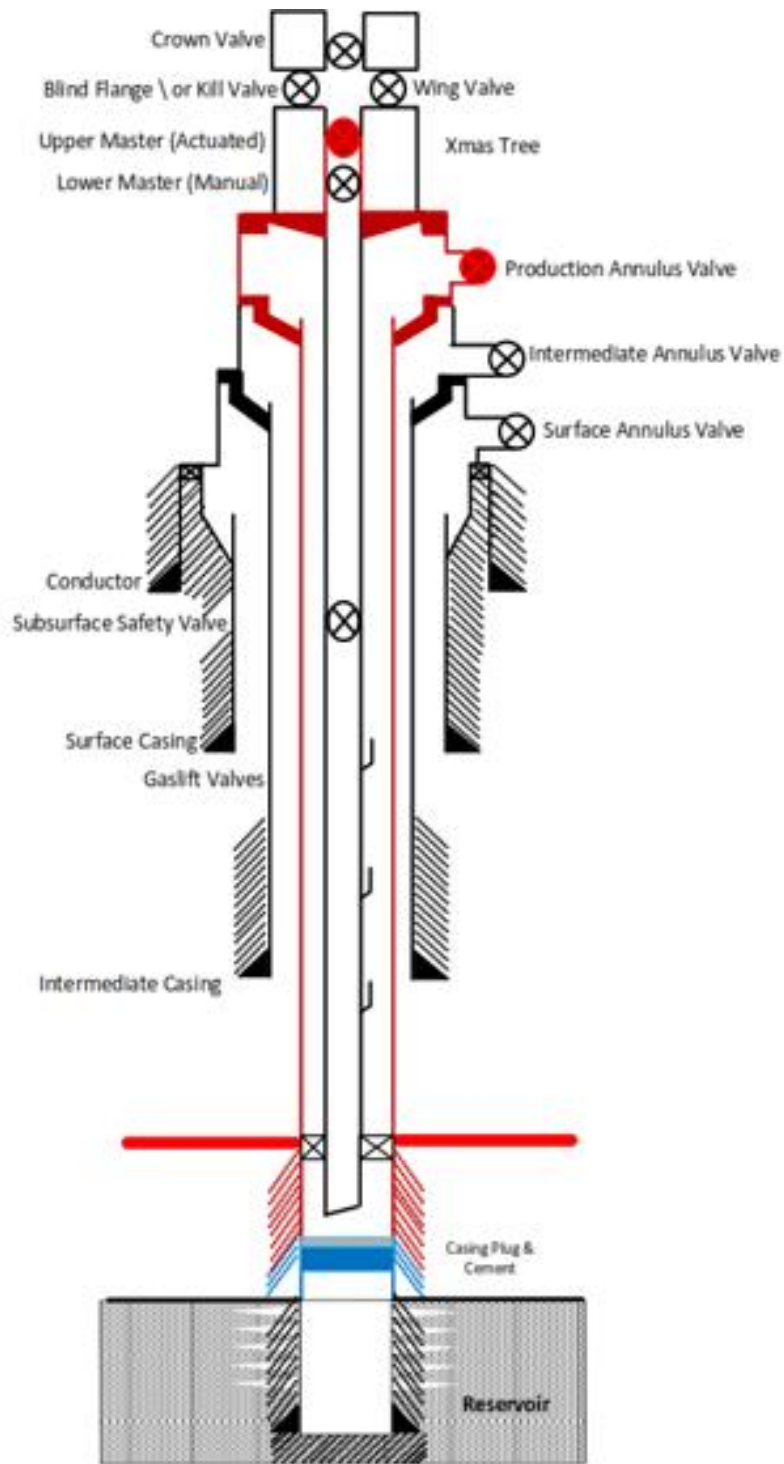
The current state of wells (prior to P&A) is as follows:

- Platform well – secured with tubing plug (potentially 1 or 2 Bream B wells) (Figure 2-2).
- Platform well – full reservoir P&A, casing and wellhead in place (potentially all of Bream B wells and Perch and Dolphin wells) (Figure 2-3).
- Subsea well – Subsea well with reservoir isolation but wellhead in place (Halibut-1, Marlin-1) (Figure 2-4).
- Subsea well – cased holed, unperforated with single cement plug (East Pilchard-1, Mulloway-1, Whiptail-1A) (Figure 2-5).



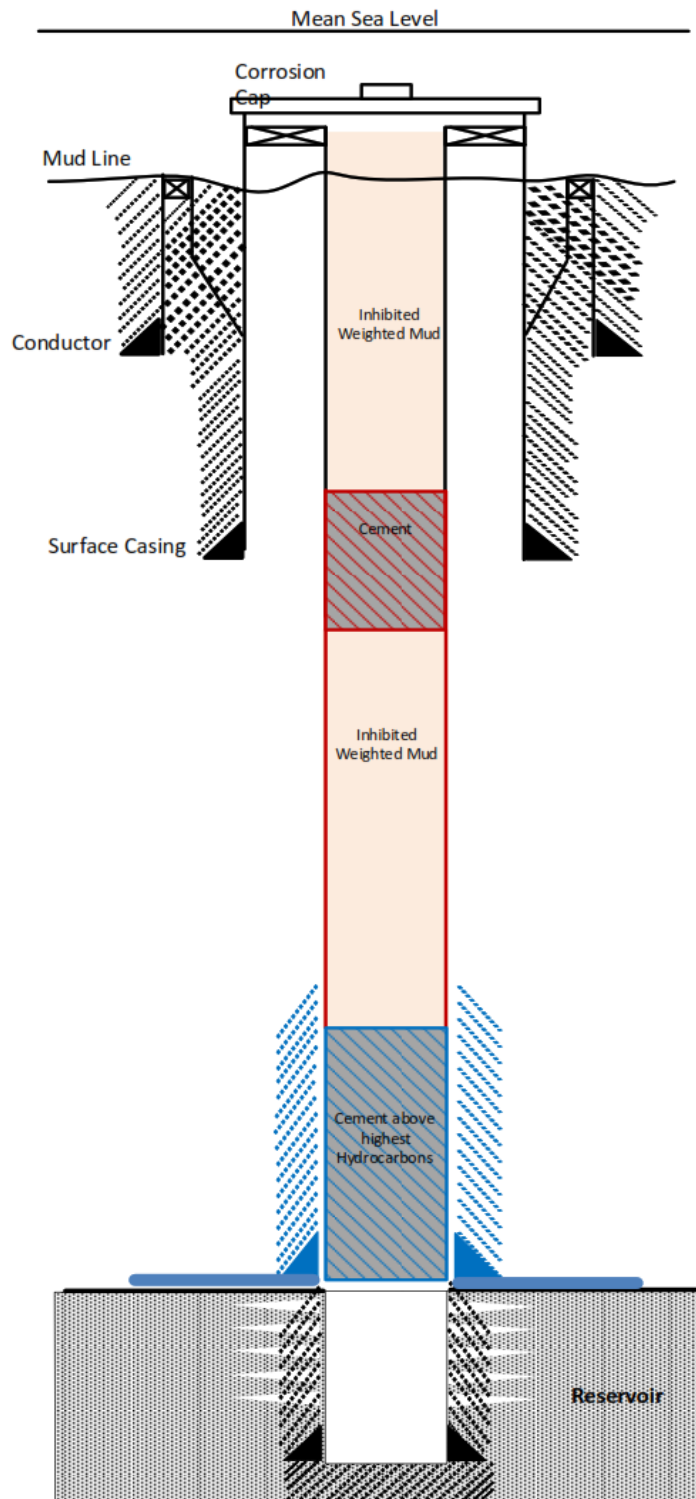
RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-2 Platform well – Plugged and secured with mechanical tubing plug (one or two Bream B wells)



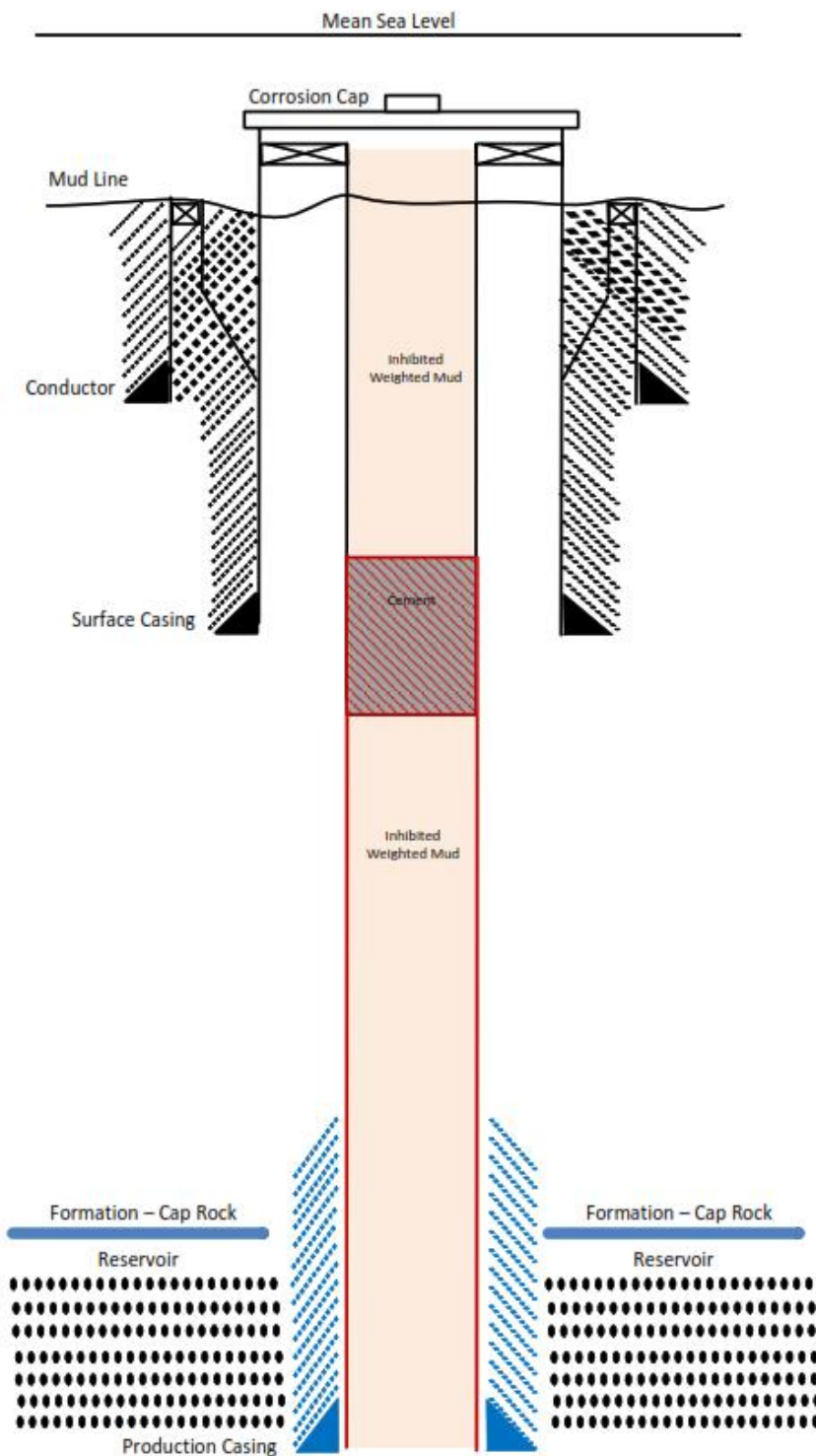
RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-3 Platform well – Plugged and secured with cement plug (potentially all Bream B wells and Perch and Dolphin)



RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-4 Subsea well with reservoir isolation but wellhead in place (Halibut-1 and Marlin-1)



RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-5 Subsea well – Cased hole unperforated with single cement plug (East Pilchard-1, Mulloway-1 and Whiptail-1A)

2.5 Hydrocarbon properties

The hydrocarbons produced from the wells subject to the P&A activity are listed in Table 2-3, which are a mixture of oil and gas wells.

For the purposes of defining the EMBA by an unplanned event for this activity, the worst-case discharge scenario (WCDS) across all 26 wells has been determined for oil spill modelling, resulting in the Whiptail-1A and Mulloway-1 well locations being used to inform the oil spill modelling. This follows an extensive internal review of the status of the wells specifically for the purposes of informing oil spill modelling. The Whiptail-1A and Mulloway-1 wells were selected because they have never been tied into production and as such, they have the greatest potential release volume in the case of a Loss Of Well Containment (LOWC) compared to the other wells, which are all depleted after production.

The WCDS rates for the oil spill modelling are described in Section 7.7.

A summary of the reasoning for excluding other wells from WCDS oil spill modelling are outlined in Table 2-4.

Table 2-3 Hydrocarbon properties of the modelled wells

Parameter	Whiptail-1A	Mulloway-1
Density	808 kg/m ³	797 kg/m ³
API gravity	43.7	46.0
Dynamic viscosity	-	-
Carbon dioxide (CO ₂)	<0.26 %	<0.25 %
Hydrogen sulphide	0 %	0.04 %
Wax content	23.4 %	8 %
Pour point	29° C	22° C

Table 2-4 Justification for excluding wells from oil spill modelling

Well	Justification for not modelling
Perch-3 and 4 Dolphin-2 and A3	No potential shallow gas has been identified on wireline or in well completion report data. There is no evidence of trapped hydrocarbons in the Lakes Entrance or Gippsland formations. There are no open perforations, as permanent reservoir abandonments were completed in the first quarter of 2023. Likely sandstone intervals are in pressure communication with seafloor, so any hydrocarbons present would have already migrated through sands.
Halibut-1	There are no open perforations that can flow to surface and even if there were some open perforations, it would require artificial lift to flow to surface. Therefore, if there is cement holding in the tubing and annuli, there will be no hydrocarbon production to surface. Any production to surface will be dependent on conducting drilling and/or well intervention activities to access the sands. Current (2023) Halibut oilfield production wells which are spatially near Halibut-1, the water cut is at about 95 % (95-99 % water cut for all Halibut wells) and oil production is dependent on gas lift being available (i.e. oil will not flow to surface without gas lift surface).
Marlin-1	There are currently no open perforations in this well. The well was initially drilled as an exploration well and five different zones were perforated and tested as part of the exploration campaign. All the perforations are currently plugged and cemented and as

Well	Justification for not modelling
	such there is no clear flowpath for hydrocarbons to flow to surface either through the tubing or the annuli. Any flow to surface would need to be induced by drilling and/or well intervention activities as the hydrocarbon sources are isolated from surface as long as the cement is holding.
East Pilchard-1	Assuming the cement in the tubing and casing is holding, there are currently no known paths for hydrocarbons to flow to surface either via the tubing or annulus. The only flow path for hydrocarbons to flow to surface either in the tubing or annulus will be the ones generated by drilling through the cement plugs in the tubing and perforating the well. This is based on two main factors, 1) water bearing volcanics that sit on top of the hydrocarbon bearing sands that form a barrier to flow upwards in the subsurface region, and 2) no signs of hydrocarbons above 2,592 m MD, with all zones above this being water-bearing.
Bream B wells	From a subsurface perspective, Esso reviewed the potential flow rates from the Bream wells and the results from this study indicated that the flow rates will be lower than the flow rates used in WCDS the in-force Bass Strait Operations EP (AUGO-EV-EMM-002).

2.6 Activity sequence

Each well's operational sequence will be dependent on multiple factors however, a generic sequence of work that will be followed for the abandonment of each well is set out below:

Bream B wells

For the Bream B wells, the abandonment activities will vary slightly between wells, depending on the specifics of each well configuration. However, an overall sequence can be summarised as follows:

- move and position JUR to the Bream B platform
- jack up on location and skid cantilever over first well and prepare well
- nipple down the Surface Tree and Tubing Spool and pull tubing
- rig up wireline and log primary cement if required
- section mill casing if required
- set reservoir cement plugs, tag, pressure test
- cut and pull production casing
- set surface cement plugs, tag, pressure test
- prep for conductors, cut conductor and verify severance
- pull conductors
- pack up and skid to next well
- after final well, prep for move, jack down and move off location.

Perch/Dolphin wells

- move and position JUR to the PCA or DPA monotowers
- jack up on location and skid cantilever over first well and prepare well
- nipple down the Surface Tree and Tubing Spool, and pull tubing
- prep for conductors, cut conductor and verify severance
- pull conductors
- pack up and skid to next well
- after final well, prep for move, jack down and move off location.

Halibut-1/East Pilchard-1/Whiptail-1A/Mulloway-1 wells

- move rig to subsea well location, jack up, prepare
- run high pressure (HP) riser and blow out preventer and test
- circulate and condition fluid, drill out shallow plugs, run to total depth with scraper

- rig up wireline and log primary cement if required
- section mill casing if required
- set reservoir cement plugs, tag, pressure test
- cut and pull production casing
- set shallow cement plugs, tag, pressure test
- cut surface casing
- pull surface casing
- recover HP riser
- cut conductor, pull wellhead and guide base
- pack up, jack down and move off to next location.

Marlin-1

- move rig to location, jack up, prepare
- cut conductor, pull wellhead and guide base
- pack up, jack down and move off location.

Marlin B conductor driving

- mobilise equipment & materials to Marlin B (MLB);
- install false table on main deck of platform;
- rig up pipe makeup & handling equipment;
- pickup and run conductor joints to the mudline;
- pickup hydraulic hammer and drive conductor joints to 80 mBML;
- cut off excess conductor (cold cut).

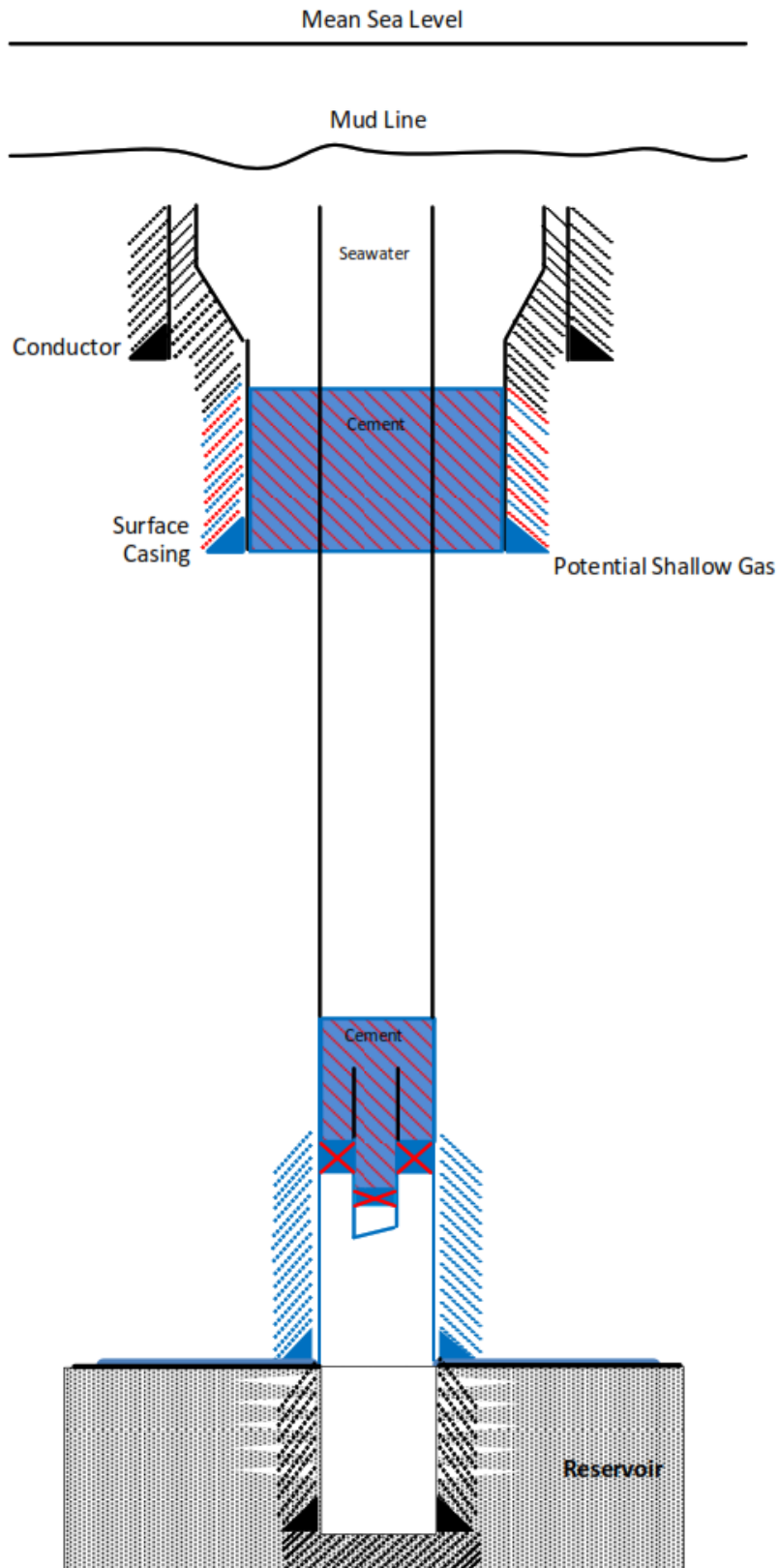
Bream field geotechnical work

- move rig to location
- soft pin rig and jack up (soft pin means minimal preload and minimal spud can penetration as typical drilling loads are not experienced and drilling cantilever is not deployed during the short-term operation)
- deploy coring equipment to sea bed
- cut and recover geotechnical core sample to depth of +/-40 m
- recover coring equipment
- jack down and move to next location.

The program sequence and the P&A designs are subject to change. However, the final designs will be included in the Well Operations Management Plan (WOMP) which must be accepted by NOPSEMA prior to the JUR arriving on location and operations commencing.

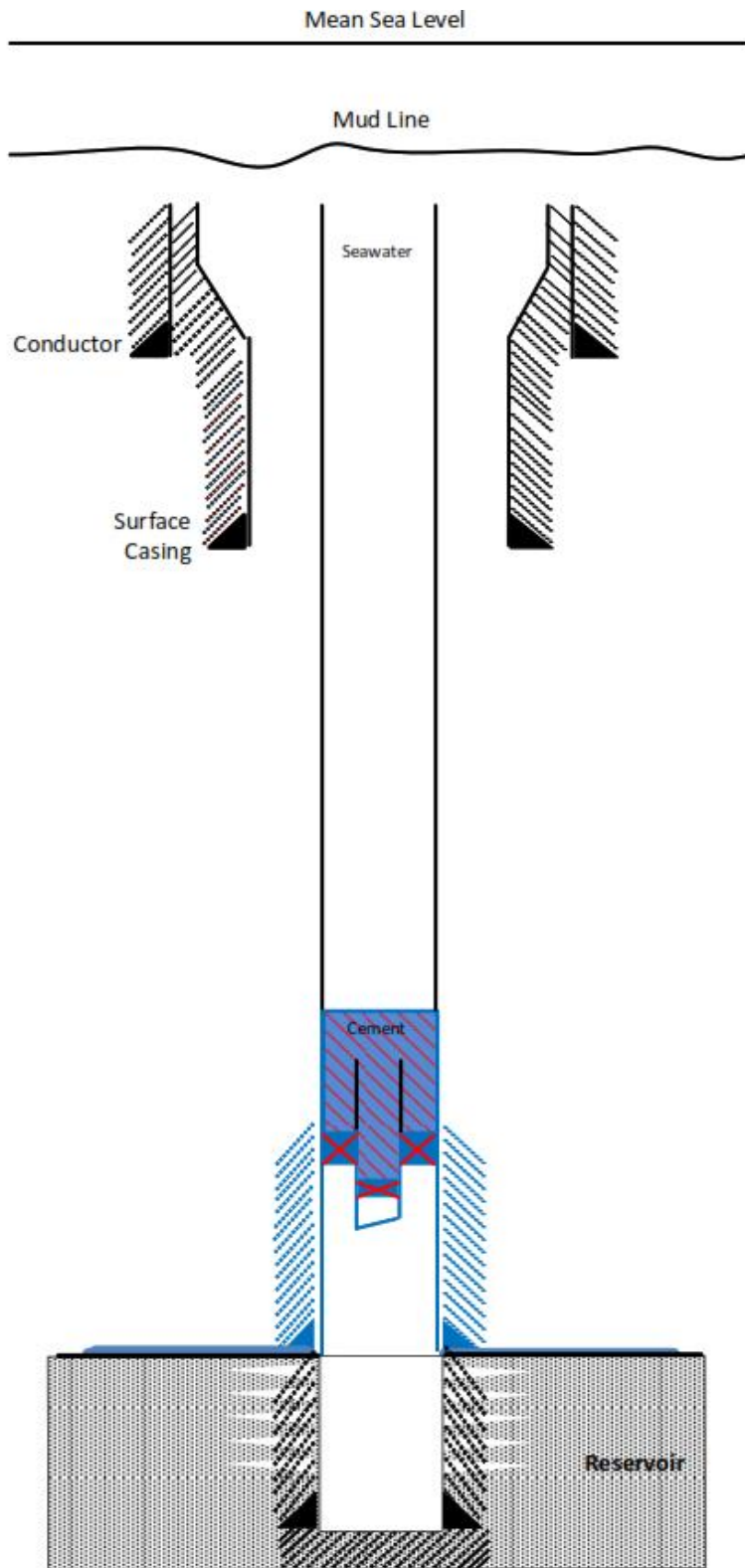
The P&A design depends on whether there is a potential for shallow gas in each individual well and whether there is one or more reservoirs to be permanently isolated. Casing and wellheads will be removed at or below the mudline for all wells. The four types of isolation design are shown in the diagrams below.

- Figure 2-6 – Single reservoir with potential for shallow gas
- Figure 2-7 – Single reservoir with no potential for shallow gas
- Figure 2-8 – Multiple reservoirs with potential for shallow gas
- Figure 2-9 – Multiple reservoirs with no potential for shallow gas.



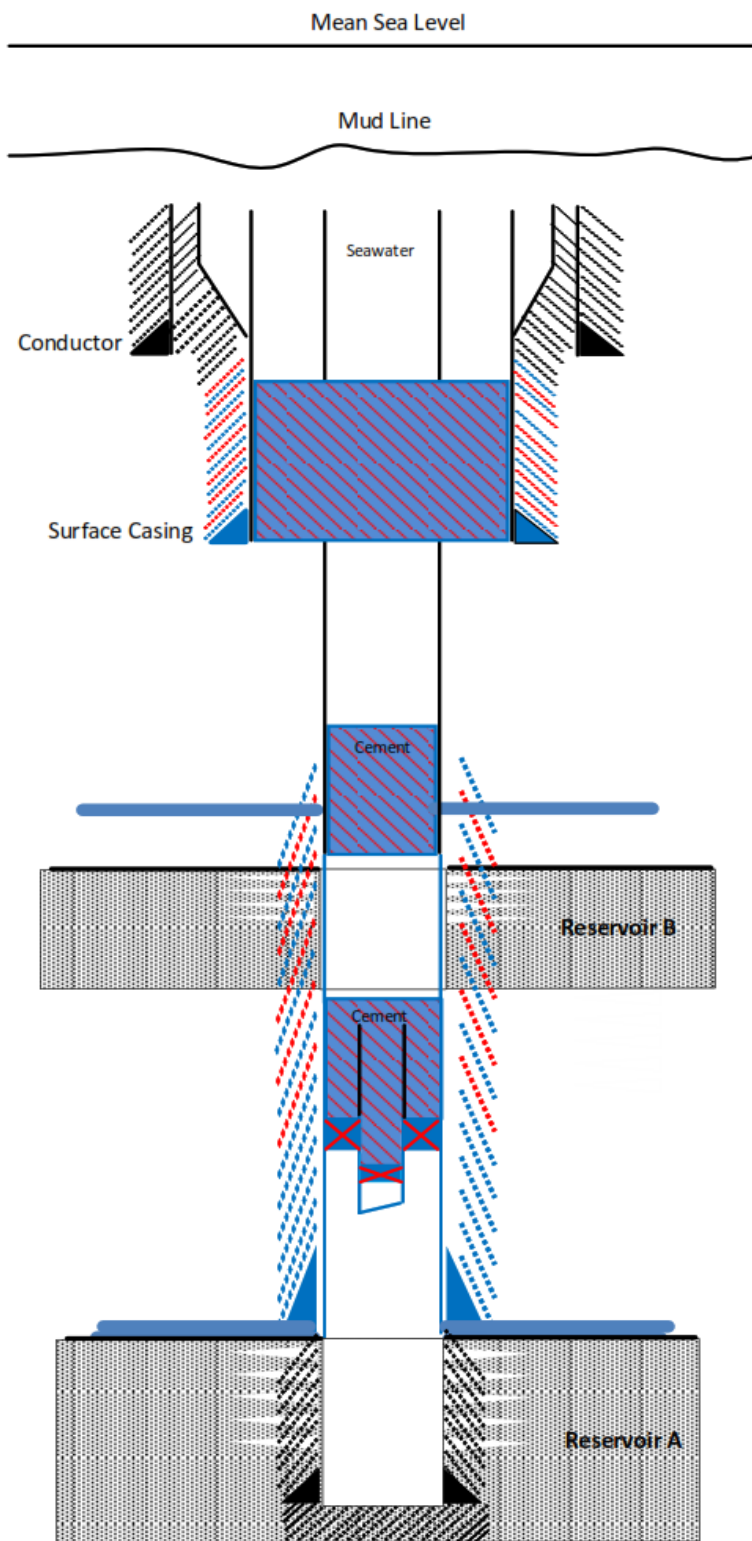
RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-6 P&A well – Single reservoir with potential for shallow gas



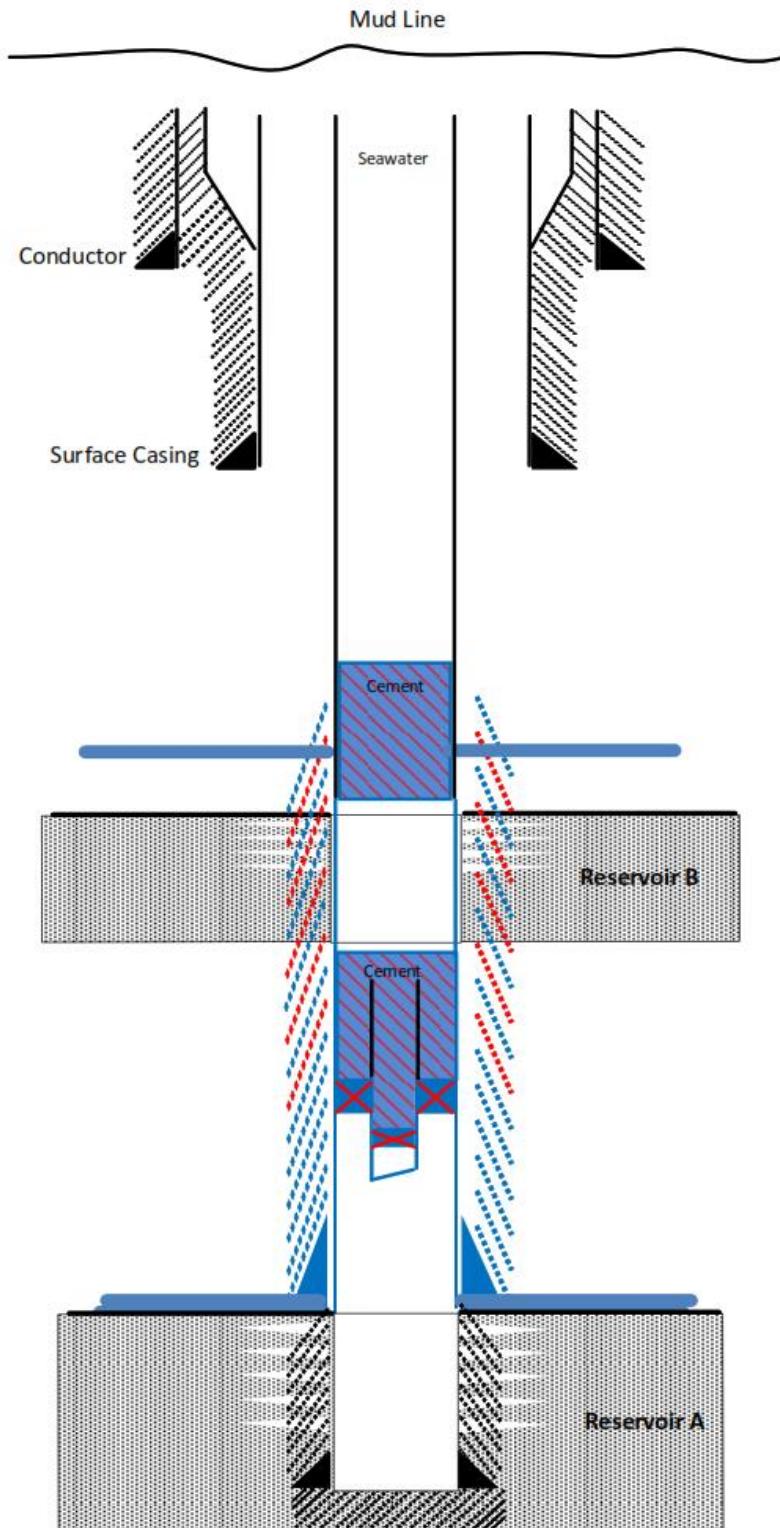
RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-7 P&A well – Single reservoir with no potential for shallow gas



RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-8 P&A well – Multiple reservoirs with potential for shallow gas



RED- Secondary well barrier envelope BLUE - Primary well barrier envelope

Figure 2-9 P&A well – Multiple reservoirs with no potential for shallow gas

2.6.1 Fluids return handling

The PCA/DPA wells already have reservoir isolation plugs in place from a prior reservoir abandonment campaign. Most of the Bream B wells are anticipated to have reservoir isolation plugs in place prior to the JUR commencement. If reservoir isolation is not achievable on certain wells at Bream B, the wells will be secured with mechanical plugs in the tubing. Therefore, hydrocarbon liquids are not anticipated to be present. In the event that not all of the wells on Bream B are able to be secured with mechanical plugs prior to JUR commencement, and hydrocarbon liquids are found to be present, they will be circulated to the production pipeline or stored on board and taken onshore for disposal.

For subsea wells with a single suspension plug (Whiptail-1A, Mulloway-1 and East Pilchard-1) the plug will be drilled out using sea water and viscosified water-based drilling fluids. This will be discharged overboard after confirming the absence of any hydrocarbon contamination.

The most likely scenario is that there is no trapped hydrocarbons below the cement plugs given the status of the well having no connection to the reservoir. There is no evidence to suggest that there have been any down hole barrier failures.

In the unlikely event that there has been a barrier failure in the well, there is a possibility that small amounts of hydrocarbon gas may be present below the shallow plugs in East Pilchard-1, Mulloway-1 and Whiptail-1A. The following discussion addresses this contingency scenario and volumes cited are estimated to represent the worst-case scenario.

In the event that gas is present below the surface cement plugs, this will be circulated from the well using conventional well control techniques to prevent further influx of hydrocarbons from the formation into the well. The well control techniques used to circulate the gas from the well will ensure that uncontrolled flow from the reservoir does not occur, limiting the volume of gas to be handled at surface to the volume that was in place at the time the surface plug was drilled out (Uncontrolled loss of containment is addressed in Section 7.7). The method of gas processing at surface, will be dependent on the volume of gas determined. Minor volumes of gas will be processed through the JUR Mud Gas Separator system and vented to atmosphere from the top of the derrick. Larger volumes of gas will be processed through the bleed off package and flared. This requirement arises as a result of the differing handling capacities of the two systems, with the bleed off package designed to efficiently process larger quantities of gas.

Estimation of the potential volume of gas below the surface plugs depends on the pressures and temperatures in the well, and the chemical composition of the hydrocarbons in the reservoirs. East Pilchard-1 is a gas accumulation in which hydrocarbons in the reservoir are present in a gaseous phase at reservoir pressure and temperature. The maximum potential volume of gas present in the East Pilchard-1 well, in the unlikely event that a barrier failure has occurred, is equal to the volume of the 9.625" casing between the base of the upper suspension plug at 890 m and the float collar at 2522m. This quantity is presented in Table 6-44.

In contrast to East Pilchard-1, both Mulloway -1 and Whiptail-1A are mature oil phase reservoirs in which the hydrocarbons in the reservoir are present in a liquid phase at reservoir pressures and temperatures. Gas that may be present in the well beneath the upper suspension plug, as a result of a potential barrier failure, will be solution gas that has been liberated from the oil phase by the reduction in hydrostatic pressure and temperature at the top of the well.

For a given temperature, the pressure at which bubbles of gas first appear in the liquid oil is called the bubble point. Determination of gas present beneath the plugs at Whiptail-1A and Mulloway-1 is calculated by determining the depth in which the hydrostatic pressure in the well is equivalent to the bubble point and assuming that the entire volume above this point to the base of the suspension plug is occupied by free gas. Changes in bubble point due to temperature have been ignored in the above calculations. Both Mulloway-1 and Whiptail-1A have mature oils with low bubble points and low gas oil ratios and gas volumes are expected to be small if present. These volumes are presented in Table 6-44.

The presence of gas below the upper suspension plug in any of the wells, will be detected when the bit breaks through the base of the upper suspension plug, by the change in pressure in the well and the increase in return flow from the well, that will result from the expansion of the gas, now that the gas is no longer constrained by the presence of the surface plug. In the event that gas is encountered beneath the plug on any of the wells, the well will be shut in using the surface BOP system that is in place specifically for this purpose. Recording of the shut in

surface pressures on the drill string and casing sides of the well, in conjunction with a knowledge of the fluid density in the drill string, the reservoir pressure, the hydrostatic gradients of the oil and gas phases in each of the wells and the casing and drill string volumes and capacities, allows the derivation of equations which can be solved to determine an accurate estimate of the gas volume present in the well.

The well will then be circulated to a fluid with a density which imposes a hydrostatic pressure on the bottom of the well that exceeds the reservoir pressure by a suitable safety margin, typically 200psi. This fluid will be circulated into the well using standard well control techniques which are based on the concept of imposing and maintaining a constant bottom hole pressure that exceeds the pressure of the reservoir. This ensures that additional influx from the reservoir does not occur during the well control operation. Drill crews and supervisors are trained in these techniques. Additionally, drills are regularly conducted to ensure that the operations can be executed safely and correctly, and equipment functions as designed.

During this circulation process, adjustable chokes downstream of the BOP's system are manipulated at the surface, to control the amount of back pressure imposed on the well and the flow rate of fluid exiting the well. This ensures that gas and or liquids circulated from the well can be controlled at a rate that does not exceed the technical specifications of the processing equipment that has been installed for such occurrences, i.e., the flow back package and or the mud gas separator system and gas vent line.

Gas from the well that is processed through the flow back package will be burnt at the flare boom resulting in combustion products comprising predominantly carbon dioxide and water vapour, whereas gas that is vented through the mud gas separator system will most likely consist of light chain gaseous phase hydrocarbons such as methane, ethane and propane constituents. It is recognized that all of these constituents contribute to greenhouse gas emission, and that methane in particular has a significantly higher contribution than other products, however the total quantities of gas or combustion by products that may be generated are not considered material enough as to warrant a decision as to whether combustion is preferable over venting when considered in the broader scale of total greenhouse gas emissions, and the operational capacities of the respective gas handling systems.

The decision as to whether to vent or process the gas through the flow back package will be determined by a risk assessment with personnel safety as the primary concern in conjunction with a consideration of actual well conditions, meteorological conditions, operational efficiency, and the anticipated quantities of gas to be handled, with appropriate reference to the technical capacity of the two gas handling systems. Where larger quantities of gas are anticipated, the flow back package will be utilized whereas smaller volumes of gas will be handled through the mud gas separator system. It is important to note that the flow back package will be commissioned and the well can be shut in and diverted to the flow back package at any time during the circulation operation if flowing conditions or operational constraints are such that its use is warranted.

The gas handling capacity of the mud gas separator system on the rig is 6,804m³ p/h whereas the flow back package is equipped to handle flow rates up to 70,740m³ p/h. The small quantities of gas at both Whiptail-1A and Mulloway-1 (estimated at 322m³ and 206m³ respectively) if present, are unlikely to warrant the use of the flow back package and will be handled using the mud gas separator system. The flow back package has the capacity to handle the estimated quantities of gas at Whiptail-1A and Mulloway-1 in 16 seconds and 10 seconds respectively, and it is clearly not practical or efficient to startup and operate the system for such a short duration given the potential quantities of gas to be processed. In contrast the quantity of gas that may be present at East Pilchard-1, in conjunction with the higher reservoir pressure at this location, indicates that a significantly larger quantity of gas would need to be circulated from the well in the event of a barrier failure and the flow back package will be the preferred gas processing method in this scenario.

2.6.2 Cementing operations

Cement plugs are installed at specific depths in the well to act as permanent barriers (refer to Section 6.8). Cement cuttings returned from the drilling of the cement plug will be discharged overboard. The existing water-based mud that is present in the well bore will be displaced during the placement of the abandonment cement plugs. This will be discharged overboard after confirming the absence of any hydrocarbon contamination.

Reservoir isolation cement plugs will be set in accordance with the accepted WOMP. Similarly, shallow plugs may be set if required to isolate shallow gas or pressurised water zones if indicated on each well as outlined in the accepted WOMP.

2.6.3 Wellhead cutting and removal

The subsea exploration wells to be abandoned were purely exploration wells and were not connected to any subsea production infrastructure. For the subsea wellheads and casing, a wellhead severance tool will be used to cut the casing at or below the mudline. Metal shavings and cement cuttings will be generated during this process, and some will settle on the seafloor.

Should the initial retrieval attempt be unsuccessful, an additional cut will be made at a shallower depth. After indications that the cut has been successfully made, the severed wellhead equipment, including the high-pressure wellhead housing, conductor/cement stub and casings, and the temporary guide base, will be retrieved. In addition, any permanent guide bases which were locked to the wellhead housing when the wellhead was run will be retrieved to the JUR for appropriate disposal.

In addition to the guide bases, some drilling debris is present at Marlin-1 and potentially Halibut-1 consisting of broken wire cables, damaged guide bases and some concrete clump weights. An attempt will be made to recover this material using the JUR assisted by ROV where the debris is located within the rig operating envelope and is readily recoverable.

Should temporary storage be required, the items will be maintained in accordance with the inspection, maintenance and repair processes outlined in the Bass Strait Operations EP (AUGO-EV-EMM-002).

The conductors and platform jacket and topsides will be decommissioned as part of the broader Esso decommissioning program of work as outlined in the Bass Strait Operations EP (AUGO-EV-EMM-002).

2.6.4 Temporary storage

In accordance with requirements of Section 572 of the OPGGS Act, Esso commits to remove from the relevant title areas structures and all equipment and other property that is neither used nor to be used in connection with the operations, in accordance with future permissioning documents submitted by Esso and accepted by NOPSEMA.

The following pieces of equipment are currently located in the JUR P&A campaign licence areas:

- Marlin-1, Halibut-1, East Pilchard-1, Mulloway-1 and Whiptail-1A wellheads
- temporary subsea equipment, such as permanent guide bases and temporary guide bases.

There is unlikely to be a need for temporary storage of subsea equipment/debris at Marlin-1, Halibut-1, Mulloway-1, Whiptail-1A and East Pilchard-1 well locations, as these exploration wells were never tied back to the subsea facilities. All subsea equipment identified in recent ROV surveys of the subsea wellheads are expected to be recoverable to the JUR.

At the completion of P&A activities it is planned to remove the subsea wellheads. In the unlikely event that the wellhead or associated wellhead equipment is not able to be retrieved, it will be left in-situ and removal of equipment will be addressed as part of the broader Esso decommissioning program of work. This work will be completed as soon as practicable and no later than the end of the life of this EP.

Note: Existing property or equipment (i.e. subsea infrastructure, wellhead etc.) has been identified via a Notice to Mariners and has been marked on navigational charts and is designated by existing PSZs. Once all property and equipment has been removed from the Title, Esso is required to apply to NOPSEMA for the PSZ to be removed. The PSZ will remain in-force until such time that removal of the PSZ has been publicly gazetted.

If required, the items will be maintained in accordance with the inspection, maintenance and repair processes outlined in the Bass Strait Operations EP (AUGO-EV-EMM-002).

2.7 Geotechnical activities at Bream field

The geotechnical activities to be conducted at the Bream field will utilise the JUR. They are a contingency activity only (i.e. they may or may not be undertaken).

The geotechnical survey equipment, as described in Table 2-5, will be deployed from the JUR in a soft-pinned position as opposed to a fully pre-loaded JUR.

Table 2-5 Proposed geotechnical investigation methods

Function	Method
Borehole sampling	
<p>Borehole sampling gathers geotechnical soil data.</p>	<p>Typically, one sample is collected from the centre of the JUR location (with a contingency for one sample at each JUR spud can location [i.e. four in total]), which is used to ground-truth the geophysical data and provides soil strength data that can be used for geotechnical analysis.</p> <p>The maximum depth of the boreholes ranges between 40 m and 80 m below the seabed.</p> <p>Borehole sampling involves drilling through soils or rock using an open-centered drill bit. Sampling can be performed using a dedicated rotary coring drill string or a drop in core barrel that latches inside the drill string. As the borehole is advanced, the core enters the open face drill bit and is retained in an inner core barrel. On reaching the final penetration depth all equipment is withdrawn from the seabed. A small hole will remain in the seabed, which will eventually collapse and/or infill. The hole left in the seabed will be proportional to the geometry of the drill string. The type of sample tube used will depend on the soil type expected and for piston/push would typically be 76 mm (outside diameter), 72 mm (internal diameter), and nominal 1 m length.</p>
Cone penetration test (CPT)	
<p>CPT determines soil strength and helps to delineate soil stratigraphy.</p> <p>This ground-truths the geophysical data and provides soil strength data that can be used for geotechnical analysis.</p>	<p>CPT involves the in-situ measurement of the resistance of ground to continuous penetration. This process involves lowering a frame to the seabed and pushing the CPT unit into the sediment at a steady penetration rate (usually 2 cm per second).</p> <p>The CPT measures resistance to the push and these measurements allow high quality interpretation of ground conditions and pore pressure dissipation testing.</p> <p>The resolution of the CPT in delineating stratigraphic layers is related to the size of the cone tip.</p> <p>A seabed frame is lowered to the seabed with the CPT unit integrated into it and operated remotely. A CPT typically takes 2-2.5 hours to complete.</p> <p>When the required penetration depth is reached, all equipment is withdrawn from the seabed. A small hole will remain in the seabed, which will eventually collapse and infill with the movement of seabed sediments.</p> <p>The CPT unit consists of a rod up to 25 m long (or discrete rod sections to make up a total of 25 m) that has a small cone at its base (with typical cone tips having a cross-sectional area of 2, 5, 10 or 15 cm²).</p>

2.8 Conductor driving activities

Conductor driving activities include the installation of up to six 20-inch and 26-inch well conductors at the Marlin B platform. These conductors will potentially be utilised in the drilling activities for the Turrum phase 3 project. The Turrum phase 3 project will be the subject of a separate EP. The conductors will be installed using a hydraulic pile driving hammer and either the existing crane on the platform..

If conductor driving encounters seabed refusal, seawater and viscosifiers may be circulated within the conductor core to facilitate reaching target depth. Refer to Vol. 2, s.2.4.2.5 and s.6.2.2 (Tables 6-2 and 6-27) of the accepted Bass Strait Operations EP (AUGO-EV-EMM-002) for details regarding conductor cleanout activities.

2.9 Rig details

2.9.1 JUR Specifications

A JUR will be used for the proposed campaign. The JUR specifications are provided in Table 2-6.

Table 2-6 JUR technical specifications

Rig name	Valaris J-107	
Owner	Valaris	
Design	Keppel Fels Mod 5 Enhanced B Class, non-propelled, self-elevating (jack up)	
Built	Singapore	
Class	ABS A1 Self Elevating Drilling Unit	
Registry	Monrovia, Republic of Liberia	
Principal dimensions	Lightship, elevated	8102 MT
	Lightship, afloat	11,889 MT
	Length between perpendiculars	71.3 m
	Length including helideck	95.7 m
	Width, overall	68.8 m
	Height, overall	7.78 m
	Maximum operating water depth	122 m
	Maximum drilling depth	9,144 m
Draft and displacement	Load line displacement (spud cans flooded)	14,657 MT
	Load line displacement (spud cans buoyant)	15,994 MT
	Load line draft	4.88 m
Accommodation (persons on board)	112	
Fluid capacities	Preload (seawater)	10,536 m ³
	Diesel fuel	538 m ³
	Lubrication oil	3.5 m ³
	Drill water	3,194 m ³

	Brine	325 m ³
	Liquid mud	619 m ³
	Potable water	326 m ³
	Base oil	162 m ³
	Bulk cement	151 m ³
	Bulk barite/bentonite	171 m ³
	Bilge	537 m ³
	Waste oil	19.5 m ³
Well control equipment	Annular preventer	1x 18-3/4", 5 ksi
	Ram preventers	2 x 18-3/4", 10 ksi double cavity 1 x 18-3/4", 10 ksi single cavity
	Diverter	1.193 m pass through; fixed

2.9.2 Support vessels

The JUR will be serviced by the existing Esso fleet which may include supply vessels, multipurpose support vessels and potentially other vessel types. These will primarily operate out of Barry Beach Marine Terminal (BBMT) for routine supply operations although other ports in the region, such as Eden, Bell Bay, Burnie, Melbourne, Geelong, Hastings, or other ports may be used.

Support will also include anchor handling tow and support (AHTS) vessels, towing vessels, platform supply vessels (PSV) or multi-purpose support vessels. These will primarily operate out of BBMT for routine supply operations although other ports may be used in the region. Support vessels will primarily operate on dynamic positioning (DP) when loading and unloading activities alongside the JUR, with their anchors secured. Vessels will not use their anchors when supporting operations at the worksite. Vessels engaged in towing do not utilise DP in routine tow operations.

All vessels supporting the P&A campaign will be specified and operated in accordance with International and Australian regulatory requirements. All vessels will be subject to ExxonMobil's Marine Quality Assurance Best Practice and will be certified as being in compliance with international maritime legislative requirements by a Classification Society registered with International Association of Classification Societies (IACS) or by AMSA.

Vessel support activities could include:

- tow the JUR to/from the activity locations
- position the JUR on location
- supply provisions including food, bulk chemicals, and diesel fuels, and other cargo to the JUR and removal of waste to shore
- deployment of ROVs or other subsea equipment
- surveys and other subsea activities including crane operations
- personnel transfer
- standby duties (if required)
- monitoring and maintaining the 500 m PSZ or any additional safety zones (if required)
- emergency response and rescue.

2.9.3 Helicopter support

Helicopter support will be provided from Esso's Longford heliport or alternate, to support the activities as follows:

- personnel transfers between shore and the platform/rig for crew changes
- emergency response, including medivac, evacuation, and search and rescue.

Non-emergency helicopter operations will be limited to daylight hours and will usually entail one return flight each weekday.

The helicopter support will be provided as part of the routine operations flights and will be an extra stop added to existing flight paths. i.e. no extra flights than what is usually required for routine operations will be needed to support the campaign.

Helicopter operations are performed in accordance with CASA regulations. Helicopter type, suitability, and performance criteria are contractually controlled, aligned with ExxonMobil Aviation Services Aviation Operations Guide (AOG) minimum requirements, as are minimum flight and engineering crew qualifications and experience levels.

2.9.4 Remotely operated vehicles (ROV)

During the P&A activities a ROV (work class or observation class) may be deployed from either (or both) the JUR and support vessel and can be fitted with various tools and sensors that can assist with subsea operational requirements, including camera systems which can be used to capture imagery of the environment and operations. ROV's may also be used to for wellhead inspection, corrosion cap removal, placement of wellhead housing gaskets, monitoring riser connector location for latching on to existing wellheads, seabed clearance survey, recovery of minor debris, spud can monitoring to assess the risk of scour, wellhead removal/cutting, and other tasks required to support operations within the capability of the ROV.

3 Description of the environment

In order to set the environmental context required to assess impacts and risks associated with the petroleum activities described in this EP, three areas have been identified as:

- Operational Area (OA) – The 500 metre PSZ around each area where the petroleum activities will take place.
- Area of Described Environment (ADE) – The area that encompasses the 12 OAs including the area connecting them to provide for a single description of the existing environment (Figure 3-1) given the close proximity of each OA to the other.
- Environment That May Be Affected (EMBA) – Determined by oil spill modelling and is the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of any spill from this activity. The description of the EMBA is provided in Appendix A.

3.1 Operational Areas

The 12 OAs for the purposes of this EP consist of the 500-metre PSZ around the JUR P&A locations of Whiptail-1A, Mulloway-1, Perch, Dolphin, Marlin B, Marlin-1, Bream B, Bream exploration well locations (Geotechnical scope, Bream 2, 3 and 5), East Pilchard-1 and Halibut-1.

The 12 OAs are shown in Figure 2-1. The ADE has been adopted to allow a conservative description of the environment of all the OA's combined see Figure 3-1.

3.2 Environment that May Be Affected

Oil spill modelling is used to determine the total area that could be exposed to hydrocarbons, including trace concentrations of oil in the water column, as a result of any spill. This is known as the EMBA and is used for planning purposes to ensure that all social and environmental sensitivities are acknowledged, described and considered in the development of the EP.

Using the results of the oil spill modelling report (RPS, 2023), the boundary of the EMBA is defined as:

The combined extent of hydrocarbon exposure to the sea surface ($\geq 1 \text{ g/m}^2$), accumulated on shorelines ($\geq 10 \text{ g/m}^2$), entrained in the water column ($\geq 10 \text{ ppb}$) and dissolved in the water column ($\geq 10 \text{ ppb}$) as a result of a $61,544 \text{ m}^3$ LOWC from Whiptail-1A and $22,747 \text{ m}^3$ LOWC from Mulloway-1, tracked for 98 days using annualised metocean conditions.

The EMBA is shown in Appendix A (Figure 1-1). Further information on the hydrocarbon thresholds, or exposure levels used to define the EMBA are shown in Table 3-1.

Table 3-1 Thresholds used to define the EMBA (NOPSEMA, 2019)

Exposure level	Threshold	Description
Surface – low exposure	1 g/m ²	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring.
Shoreline – low exposure	10 g/m ²	Predicts potential for some socioeconomic impact.
In-water (dissolved) – low exposure	10 ppb (instantaneous)	Establishes planning area which may be considered for scientific monitoring based on potential for exceedance of water quality triggers.
In-water (entrained) – low exposure	10 ppb (instantaneous)	Establishes planning area which may be considered for scientific monitoring based on potential for exceedance of water quality triggers.

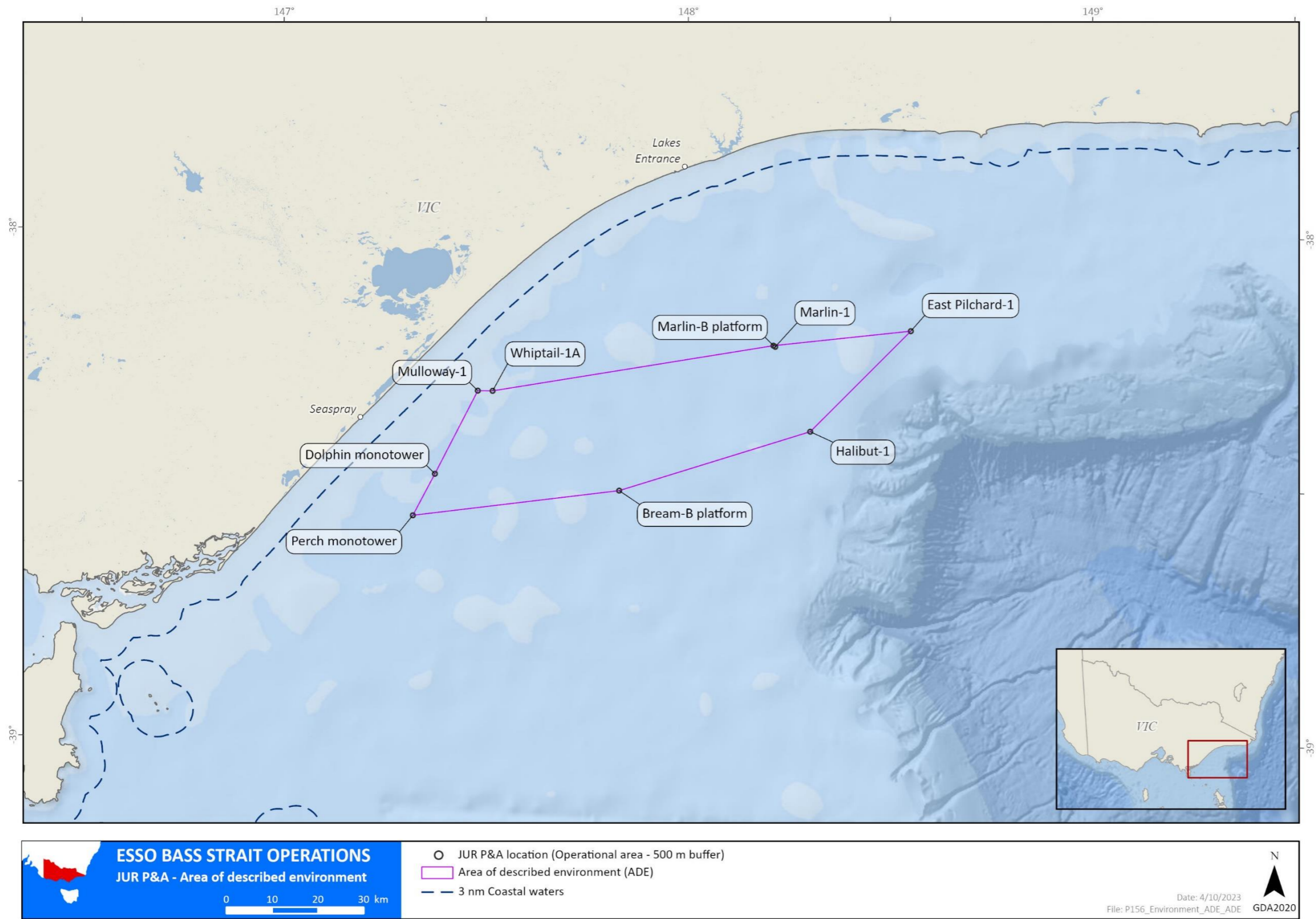


Figure 3-1 JUR P&A ADE

3.3 Values and sensitivities

The values, sensitivities and receptors found within the ADE are described in Table 3-2. The values, sensitivities and receptors found within the EMBA are described in Appendix A.

EPBC Act Listed Species identified for the ADE and EMBA are provided in Appendix B. EPBC Act Protected Matters Search Tool Reports for the ADE and EMBA are presented in Appendix C and Appendix D respectively.

Table 3-2 Values and sensitivities within the ADE

Value/sensitivity	Receptor	Description
Protected matter		
World Heritage	-	<p>World Heritage Listed Properties are examples of sites that represent the best examples of the world’s cultural and heritage values, of which Australia has 20 properties (DCCEEW, 2023a) In Australia, these properties are protected under Chapter 5, Part 15 of the EPBC Act.</p> <p>There are no World Heritage Properties within or adjacent to the ADE. The closest World Heritage Property is the Royal Exhibition Building and Carlton Gardens (onshore), which is located 222 km northwest of the ADE. World Heritage-listed places intersected by the EMBA are described in Section 1.1.1 of Appendix A.</p>
National Heritage	-	<p>The National Heritage List is Australia’s list of natural, historic, and Indigenous places of outstanding significance to the nation (DCCEEW, 2023b). These places are protected under Chapter 5, Part 15 of the EPBC Act.</p> <p>There are no National Heritage-listed places within or adjacent to the ADE. The closest National Heritage Place is the Australian Alps National Parks and Reserves (onshore), which is located 75 km north the ADE. National Heritage-listed places intersected by the EMBA are described in Section 1.1.2 of Appendix A.</p>
Wetlands of International Importance (Ramsar wetlands)	-	<p>Australia has 67 Ramsar wetlands that cover more than 8.3 million hectares (DCCEEW, 2023c). Ramsar wetlands are those that are representative, rare, or unique wetlands, or are important for conserving biological diversity, and are included on the List of Wetlands of International Importance developed under the Ramsar Convention. These wetlands are protected under Chapter 5, Part 15 of the EPBC Act.</p> <p>There are no Ramsar wetlands within or adjacent to the ADE. The closest Ramsar wetland is the ‘Gippsland Lakes’, which is located 25 km north of the ADE and. Ramsar wetlands intersected by the EMBA are described in Section 1.1.4 of Appendix A.</p>
Nationally Important Wetlands (NIWs)	-	<p>NIWs are considered significant for a variety of reasons, including their importance for maintaining ecological and hydrological roles in wetland systems, providing important habitat for animals at a vulnerable or particular stage in their life cycle, supporting 1% or more of the national population of any native plant or animal taxa or for its outstanding historical or cultural significance (DCCEEW, 2023d).</p> <p>There are no NIWs within or adjacent to the ADE. The closest NIW is the Lake Wellington wetlands (onshore), which is located 19 km northwest of the ADE. NIWs intersected by the EMBA are described in Section 1.1.5 of Appendix A.</p>

Value/sensitivity	Receptor	Description	
Listed Threatened Species and Listed Migratory Species (listed in Appendix B, described in Appendix A)	Fauna	Threatened species (Appendix B)	
		Total Threatened Species	43
		Critically Endangered	2
		Endangered	11
		Vulnerable	23
		Conservation Dependent	7
		Listed migratory species	
		Fish – Bony (Appendix B Table B-1)	-
		Fish – Cartilaginous (Appendix B Table B-2)	5
		Birds (Appendix B Table B-3)	26
Biologically Important Areas (BIAs)	Marine fauna	Mammals – Cetaceans - (Appendix B Table B-4)	12
		Mammals – Pinnipeds (Appendix B Table B-5)	-
		Mammals – Sirenia (Appendix B Table B-6)	-
		Mammals – Reptiles (turtles) (Appendix B Table B-7)	3
		BIAs are areas where a protected species display biologically important behaviours such as breeding, foraging, resting and migration. These areas serve to highlight parts of a marine region that are particularly important for the conservation of protected species (DCCEEW, 2023e). The following 11 BIAs are within the ADE. The BIAs within the EMBA are outlined in Appendix A.	
		Species	BIA type

Value/sensitivity	Receptor	Description	
		Birds (Appendix B Table B-3)	
		Black-browed albatross (Figure 3-2)	Foraging
		Buller’s albatross (Figure 3-2)	Foraging
		Campbell albatross (Figure 3-2)	Foraging
		Common diving-petrel (Figure 3-2)	Foraging
		Indian yellow-nosed albatross (Figure 3-3)	Foraging
		Short-tailed shearwater (Figure 3-3)	Foraging
		Shy albatross (Figure 3-3)	Foraging
		Wandering albatross (Figure 3-3)	Foraging
		Whales (Appendix B Table B-4)	
		Pygmy blue whale (PBW) (Figure 3-4)	Foraging
		Southern right whale (SRW) (Figure 3-5)	Migration
		Sharks (Appendix B Table B-2)	
		White shark (Figure 3-6)	Reproduction
Listed Threatened Ecological	-	An ecological community is a naturally occurring group of native plants, animals and other organisms that are interacting in a unique habitat. TECs are a MNES under the EPBC Act. TECs provide wildlife corridors and/or habitat refuges for many plant and animal species, and listing a TEC provides a form of landscape or systems-level conservation (including threatened species) (DCCEEW, 2023f).	

Value/sensitivity	Receptor	Description
Communities (TECs)		There are no TECs within or adjacent to the ADE. The closest TEC is the 'Subtropical and Temperate Coastal Saltmarsh', which has a patchy distribution along the coastline adjacent to the ADE. TECs intersected by the EMBA are described in Section 1.1.6 of Appendix A.
Australian Marine Parks (AMPs)	-	AMPs are areas established help conserve marine life. AMPs have natural, cultural, heritage and socio-economic values. The natural values of marine parks refer to the habitats, species and ecological communities within them, and the processes that support their connectivity, productivity, and function (Australian Marine Parks Science Atlas, 2023). There are no AMPs within or adjacent to the ADE. The closest AMP is Beagle AMP which is located 62 km southwest of the ADE. AMPs intersected by the EMBA are described in Section 1.1.7 of Appendix A.
Key Ecological Features (KEFs)	Upwelling East of Eden (Figure 3-7)	KEFs are components of the marine ecosystem that are considered to be important for biodiversity or ecosystem function and integrity of a Commonwealth marine area (DCCEEW, 2023e). The Upwelling East of Eden is present along the eastern Victorian and southern New South Wales. Dynamic swirls 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. Therefore, the key value of the KEF is its high productivity and aggregations of marine life (Commonwealth of Australia, 2015). The upwelling contributes to regionally high primary productivity which 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, that known to arrive when significant krill aggregations form. The area is also important for seals, other cetaceans, sharks, and seabirds (Commonwealth of Australia, 2015). KEFs intersected by the EMBA are described in Section 1.1.8 of Appendix A.
Other protected areas		
Social/cultural/conservation	National parks and reserves	There are no national parks or reserves within the ADE. The closest protected area is the Ninety Mile Beach Marine National Park which is located 17 km west of the ADE. National parks and reserves intersected by the EMBA are listed in Section 1.1.9 of Appendix A.

Value/sensitivity	Receptor	Description
Commonwealth Heritage Listed places	-	<p>Commonwealth Heritage Listed places are Indigenous, historic, and natural heritage places owned or controlled by the Australian Government. These include places connected to defence, maritime safety, communications, customs, and other government activities that also reflect Australia’s development as a nation (DCCEEW, 2023g).</p> <p>There is no Commonwealth Heritage Listed places within the ADE. Commonwealth Heritage Listed places intersected by the EMBA are described in Section 1.1.3 of Appendix A.</p>
Historic maritime	Historic shipwrecks (Figure 3-8)	<p>Historic shipwrecks are located all along the Australian coastline, numerous are located within the Gippsland region. The following shipwrecks are within the ADE, however, neither of them lies within the OAs or have a protection zone:</p> <ul style="list-style-type: none"> • Struan (1856) • Talak (n.d) <p>No shipwreck protection zones are within the ADE or OAs. The closest protection zone is the SS Glenelg, which is 9.8 km west of the ADE.</p>
Environmental values – Other		
Physical environment	Climate and meteorology	<p>Climate statistics from 1991-2020 at east Sale (Victoria) (the closest weather station to the ADE) has average monthly minimum temperatures ranging from 3.6°C – 13.6°C and average monthly maximum temperatures ranging from 14.2°C – 26.1°C with January hosting the hottest temperatures and July the coolest. Rainfall ranges from 33.4 mm in May (lowest) to 62.2 mm in November (highest) (BOM, 2023).</p> <p>Mean wind speeds for east Sale between 1991-2020 range from 11.1 to 16.3 km/hour in the morning and 17.1 to 24.2 km/hour in the afternoon, with maximum gusts ranging from 97 to 152km/hour (BOM, 2023).</p> <p>Bass Strait is located on the northern edge of the westerly wind belt known as the Roaring Forties. Occasionally, intense meso-scale low-pressure systems occur in the region, bringing very strong winds, heavy rain and high seas. These events are unpredictable in occurrence, intensity and behaviour, but are most common between September and February (McInnes & Hubbert, 2003)</p>
	Oceanography	<p>Wind driven currents in Gippsland Basin can be caused by the direct influence of weather systems passing over Bass Strait (wind and pressure driven currents) and the indirect effects of weather systems passing over the Great Australian Bight (GEMS, 2005).</p>

Value/sensitivity	Receptor	Description
		<p>The eastern parts of the region are strongly influenced by the East Australian Current that flows southward adjacent to the east coast of New South Wales, Victoria and Tasmania, carrying warm equatorial waters and forming eddies which in turn cause upwellings.</p> <p>At the shelf break east of Bass Strait, nutrient-rich waters rise to the surface in winter as part of the processes of the Bass Strait Water Cascade creating an area of high productivity.</p> <p>Further offshore currents are driven by the Sub-Antarctic Water movement, coming from the south, and the Bass Strait Water movement from the west (Tomczak, 1985) Rochford, 1975; in (Gibbs, Arnott, Longmore, & Marchant, 1991).</p>
	Bathymetry (Figure 3-9)	The ADE is located in water depths ranging from 10 to 100 m in the Gippsland Basin. The bathymetry contours generally run parallel to the coast, though this pattern is less pronounced in waters deeper than 50 m.
	Benthic habitat	<p>The Gippsland Basin is composed of a series of massive sediment flats, interspersed with small patches of reef, bedrock, and consolidated sediment. The sandy plains 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).</p> <p>Benthic fauna present on the soft sediment can be broadly divided into two groupings (Parry, Campbell, & Hobday, 1990):</p> <p>Epibenthos which includes sessile species such as sponges and bryozoans, hydroids, ascidians, poriferans and mobile fauna including hermit crabs, sea stars and octopus.</p> <p>Infauna which includes a diverse range of species such as amphipods, shrimps, bivalves, tubeworms, small crustaceans, nematodes, nemertean, seapens, polychaetes and molluscs.</p>
Economic environment	Commercial fishing (See Appendix A Section 1.6 for description of fisheries)	<p>Commonwealth fisheries overlapped by the ADE:</p> <ul style="list-style-type: none"> • Bass Strait Central Scallop Zone Fishery- 0.1 % overlap with the ADE (see Figure 3-10) • Eastern Tuna and Billfish Fishery – 0.1 % overlap with the ADE (see Figure 3-11) • Small Pelagic Fishery – 0.1 % overlap with the ADE (see Figure 3-12) • Southern and Eastern Scalefish and Shark Fishery- 0.07 % overlap with the ADE (see Figure 3-13) Section 1.6.2 of Appendix A details the sub sectors of the Fishery that have jurisdiction to fish in the ADE and EMBA. • Southern Bluefin Tuna Fishery – 0.03 % overlap with the ADE (see Figure 3-14) • Southern Squid Jig Fishery - 0.1% overlap with the ADE (see Figure 3-15) • State Fisheries – Victoria overlapped by the ADE:

Value/sensitivity	Receptor	Description
		<ul style="list-style-type: none"> Abalone Fishery – 2.1 % overlap with the ADE (see Figure 3-16) Eel Fishery – data unavailable for this fishery Giant Crab Fishery – 2.1 % overlap with the ADE (see Figure 3-17) Rock Lobster Fishery - 2.1 % overlap with the ADE (see Figure 3-17) Pipi Fishery – 2.9 % overlap with the ADE (see Figure 3-18) Wrasse Fishery - 1.4% overlap with the ADE (see Figure 3-19) Sea Urchin Fishery – 2.6 % overlap with the ADE (see Figure 3-20) Scallop Fishery – 2.1 % overlap with the ADE (see Figure 3-21) Octopus Fishery – 2.1% overlap with the ADE (see Figure 3-22) Ocean (general) - 1.4 % overlap with the ADE. Trawl (inshore) – 1.4 % overlap with the ADE.
	Oil and gas	<p>Other than the Esso permit areas in the Gippsland Basin there are 11 other permit areas held by other operators:</p> <ul style="list-style-type: none"> Cooper Energy (VIC/L21, VIC/L32, VIC/RL13, VIC/L14, VIC/L15, VIC/P72) SGH Energy (VIC/L29) Carnarvon Hibiscus (VIC/L31, VIC/P57) Emperor Energy/Shell Energy (VIC/P47) Lanberis Energy (VIC/P71).
	Shipping	The southeast coast of Australia has high shipping activity. This traffic includes international and coastal cargo trade, and passenger and ferry services. (see Figure 3-24)
	Defence	The Australian Defence Force conducts a range of training, research activities, and preparatory operations in Australian waters. These activities may 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. There are no known defence activities within the ADE.
	Tourism	In East Gippsland, primary tourist locations are the Gippsland Lakes (the largest inland waterway in Australia), Lakes Entrance, Marlo, Cape Conran, and Mallacoota. The area is renowned for its nature-based tourism (e.g. Croajingolong National Park), recreational fishing and water sports (lake and beaches). The South Coast region includes all the towns from Wollongong south to the Victorian border.

Value/sensitivity	Receptor	Description
	Renewable energy	<p>The ADE is located within Australia’s first offshore area decalred available for renewable energy projects (OEI-01-2022 Part 1) See Figure 3-23. The ADE overlaps with the following license areas:</p> <ul style="list-style-type: none"> • Aurora Green – FL-012 • Navigator North – FL-011 • Gippsland Dawn – FL-007 <p>There is no overlap between these licence areas and the OA’s.</p>
Cultural	Native Title determinations and claims	<p>A "determination of native title" is a decision on whether native title exists in relation to a particular area of land or waters. An "approved determination of native title" is a determination of native title made by the Federal Court of Australia, the High Court of Australia, or a recognised State/Territory body within its jurisdictional limits (Australian Government, 2023).</p> <p>Native Title claims are claimants whose applications (for a determination) have been accepted for registration. A claim application is made by a native title claim group that claims they hold native title rights and interests in an area of land and/or water, according to their traditional laws and customs (Australian Government, 2023); (NNTT, 2023).</p> <p>There are no Native Title determinations or claims within the ADE. Native Title determinations or claims intersected by the EMBA are described in Section 1.5 of Appendix A.</p>
	Sea Country	<p>“Gunai/Kurnai” is the name of the indigenous group who have inhabited the Gippsland region for at least 18,000 years (Ramahyuck, 2023). The Gunaikurnai Land and Waters Aboriginal Corporation (GLAWAC, 2023) describe their Country as:</p> <p>“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 our history”.</p> <p>Country can be broadly categorised (although interconnected) into Land and Sea Country. Sea Country, also known as Saltwater Country, is of particular importance for this activity, as the ADE may exist within known areas of Sea Country. Smyth and Isherwood (2016) describe Sea Country as all estuaries, beaches, bays, and marine areas collectively, within a traditional estate. Sea Country contains evidence of the ancient mystical events by which all geographic features, animals, plants, and people were created. The sea, like the land, is integral to the identity of indigenous groups. Connection to Sea Country is accompanied by a complexity of cultural rights and responsibilities. Formal recognition of Sea Country rights lags considerably compared to land rights; this could be for a range of reasons including conflicting perspectives and opinions on traditional custodianship of land and how far it extends (Smyth & Isherwood, 2016).</p> <p>There has been recent momentum regarding Sea Country in Australia, which can be seen in the Australian Government’s \$11.6 million dollar commitment to the Sea Country IPA Program. The program seeks to increase the area of sea in IPAs to</p>

Value/sensitivity	Receptor	Description
		strengthen the conservation and protection of Australia’s marine and coastal environments, while creating employment and economic opportunities for Indigenous Australians (DCCEWW, 2023h). As part of the program, GLWAC 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 Victorian/New South Wales border. The proposed area is located within the coastal waters of the Gippsland region, comprising of numerous marine and coastal parks and includes the Ramsar listed Gippsland Lakes and Raymond Island, a highly significant cultural site (both sites are outside of the ADE).
Social environment	Recreational fishing, boating and leisure	Recreational fishing along the Gippsland coast typically targets snapper, King George whiting, flathead, bream, sharks, tuna, calamari, and Australian salmon. Recreational fishing and boating are largely confined to the Gippsland Lakes 25 km north of the ADE and nearshore coastal waters. The Gippsland Lakes Fishing Club is a well known active recreational fishing club within the region.

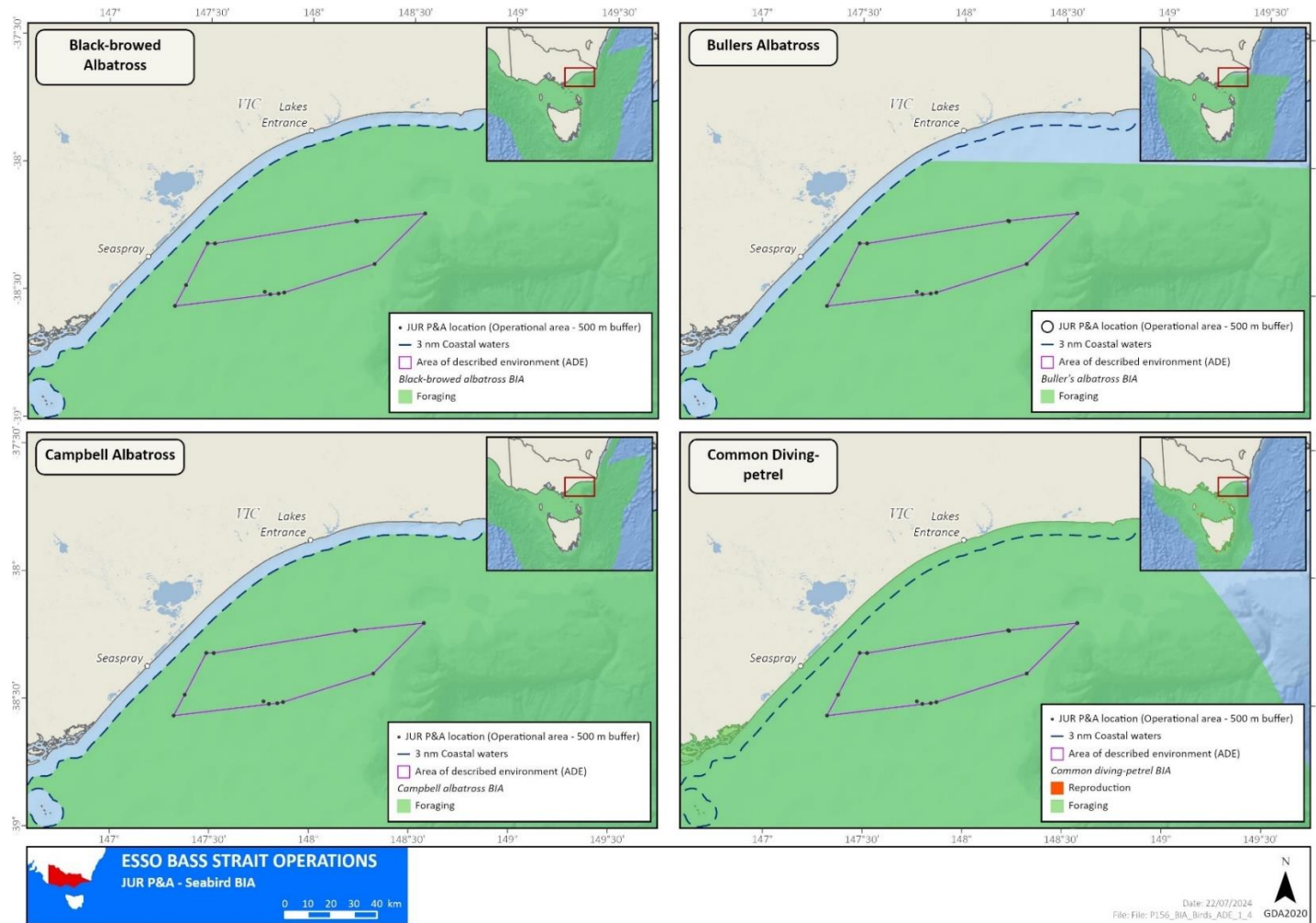


Figure 3-2 Foraging BIA for the black-browed albatross, Buller’s albatross, Campbell albatross and common diving-petrel overlapped with the ADE

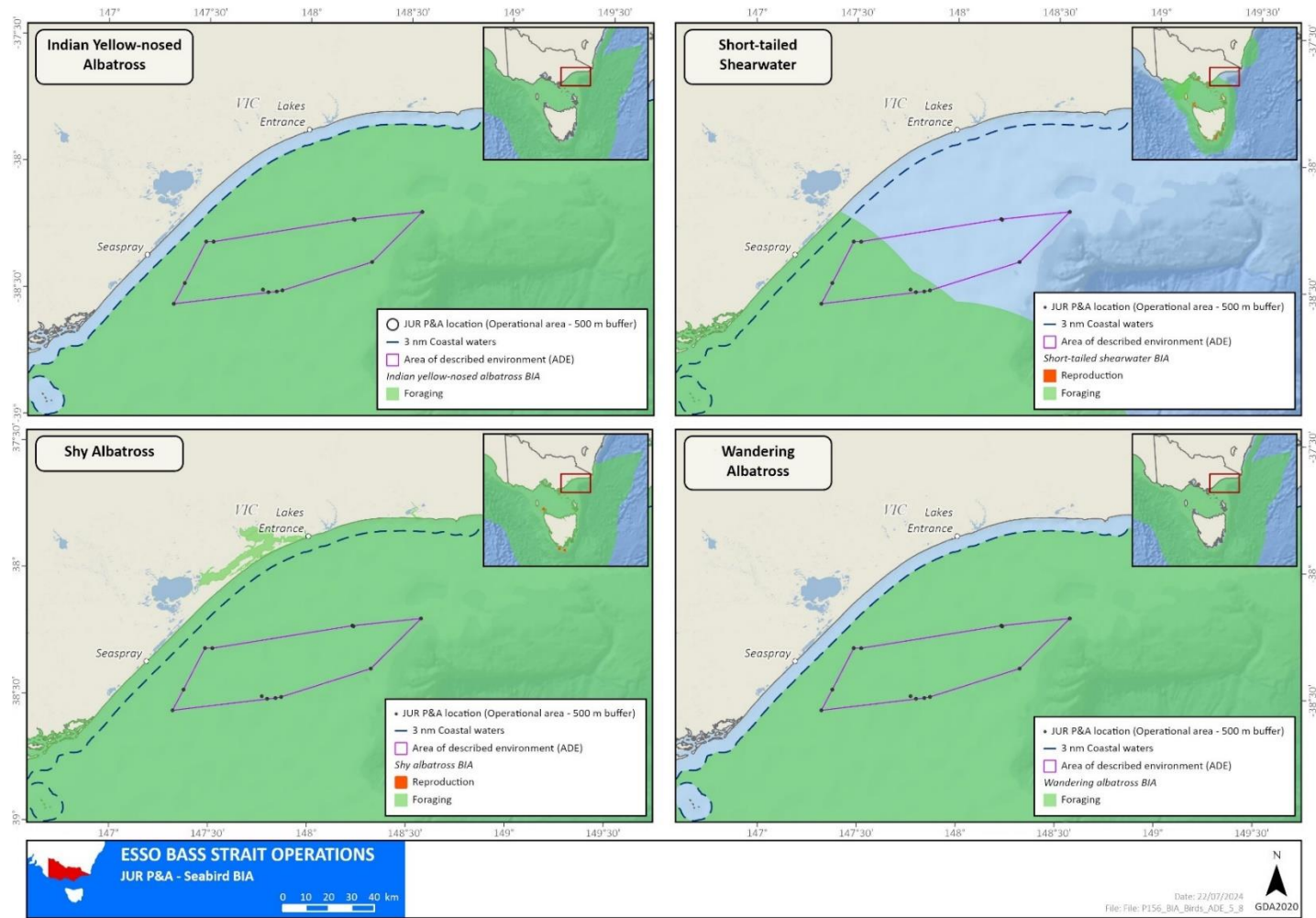


Figure 3-3 Foraging BIA for the Indian yellow-nosed albatross, short-tailed shearwater, shy albatross and wandering albatross overlapped with the ADE

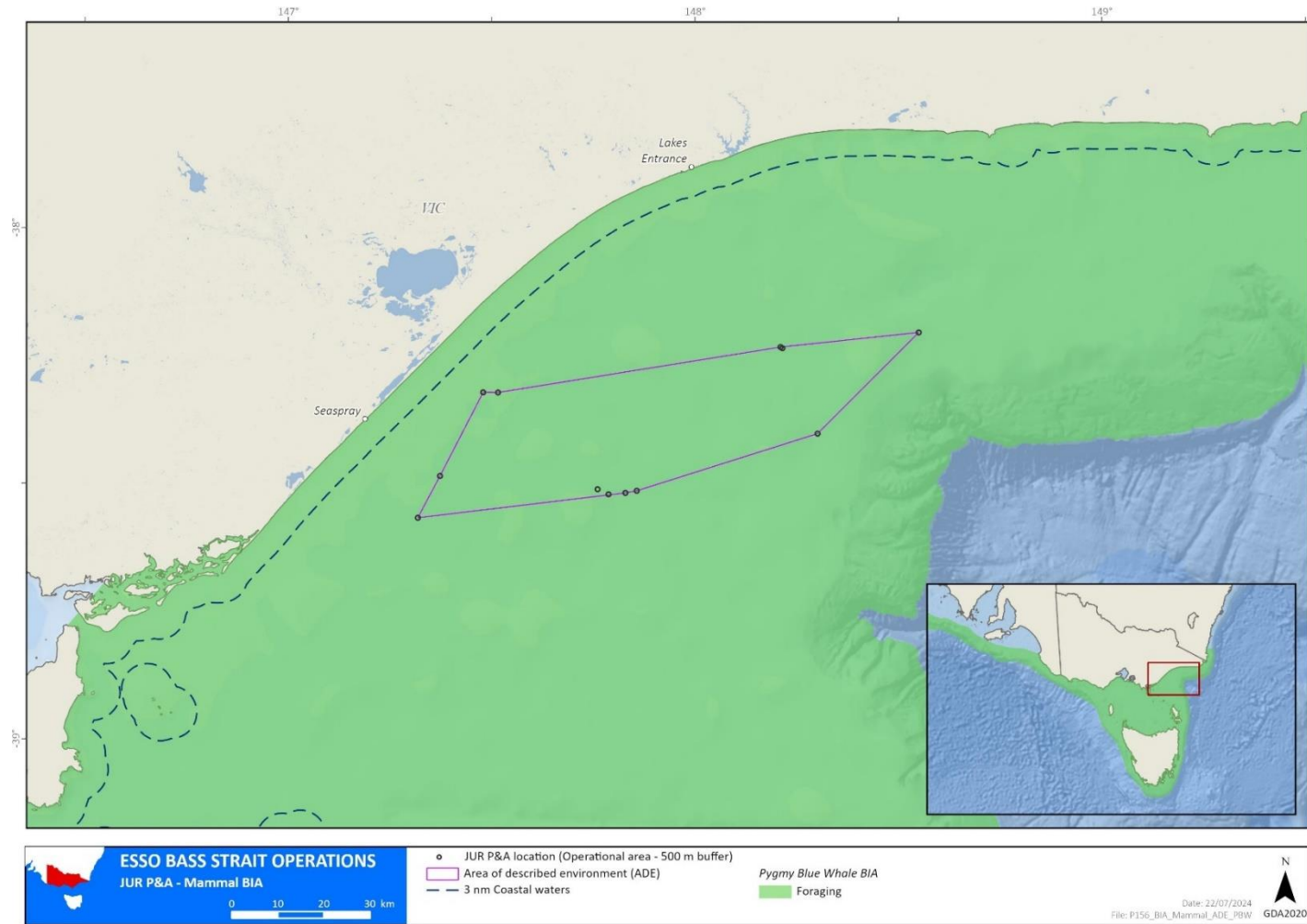


Figure 3-4 Foraging BIA for the PBW overlapped with the ADE

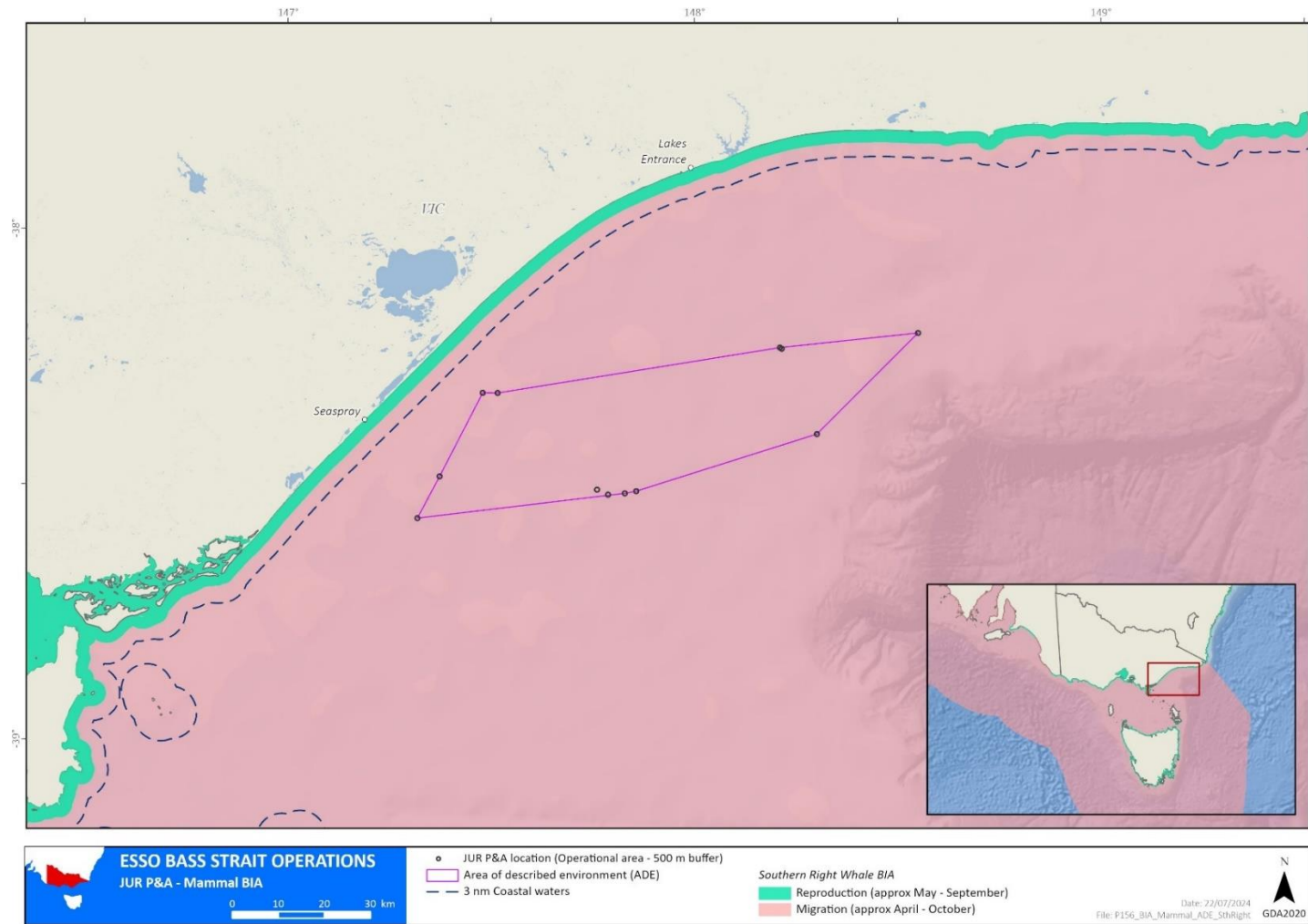


Figure 3-5 Migration BIA for the SRW overlapped with the ADE

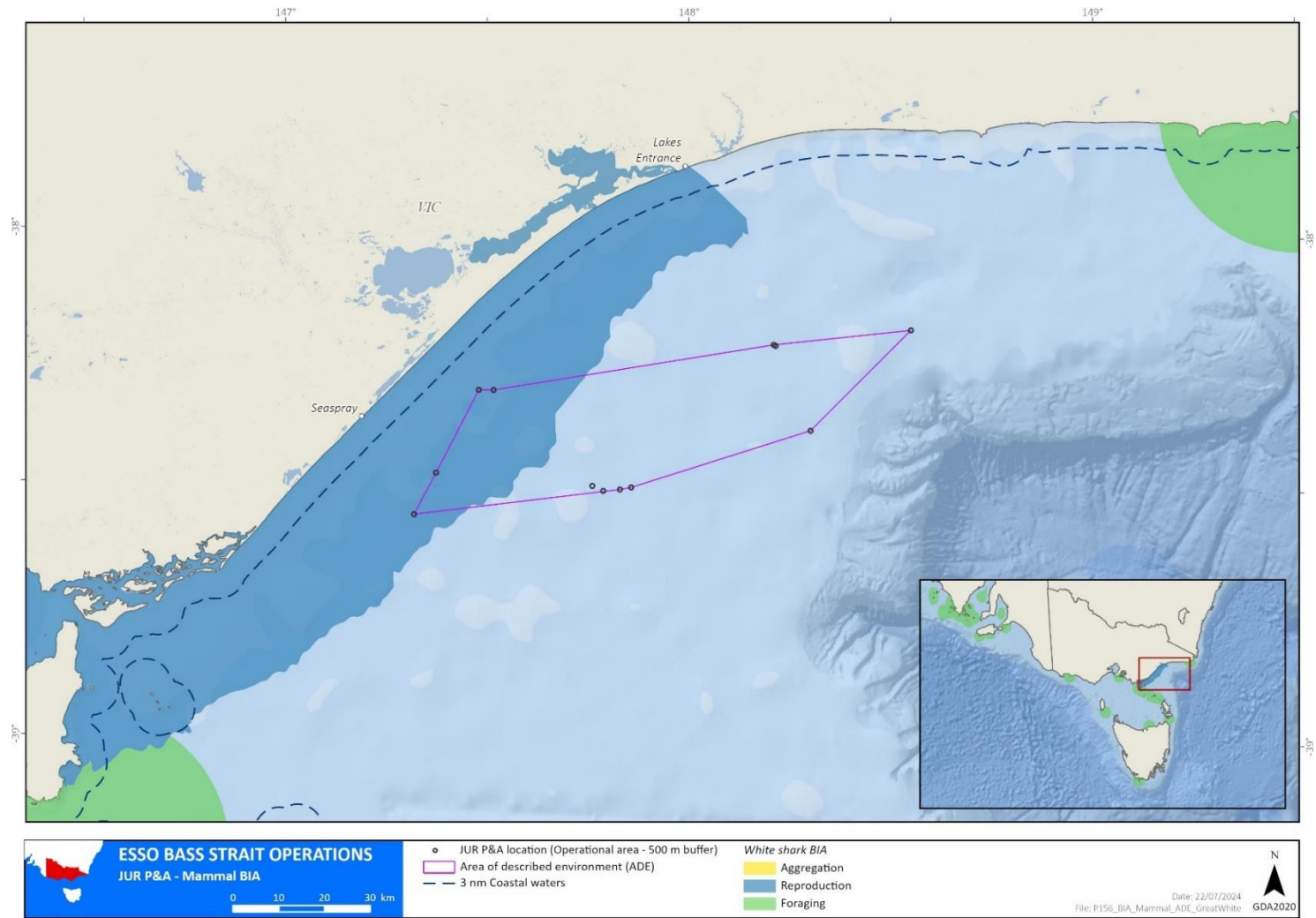


Figure 3-6 Reproduction White shark BIA overlapped by the ADE

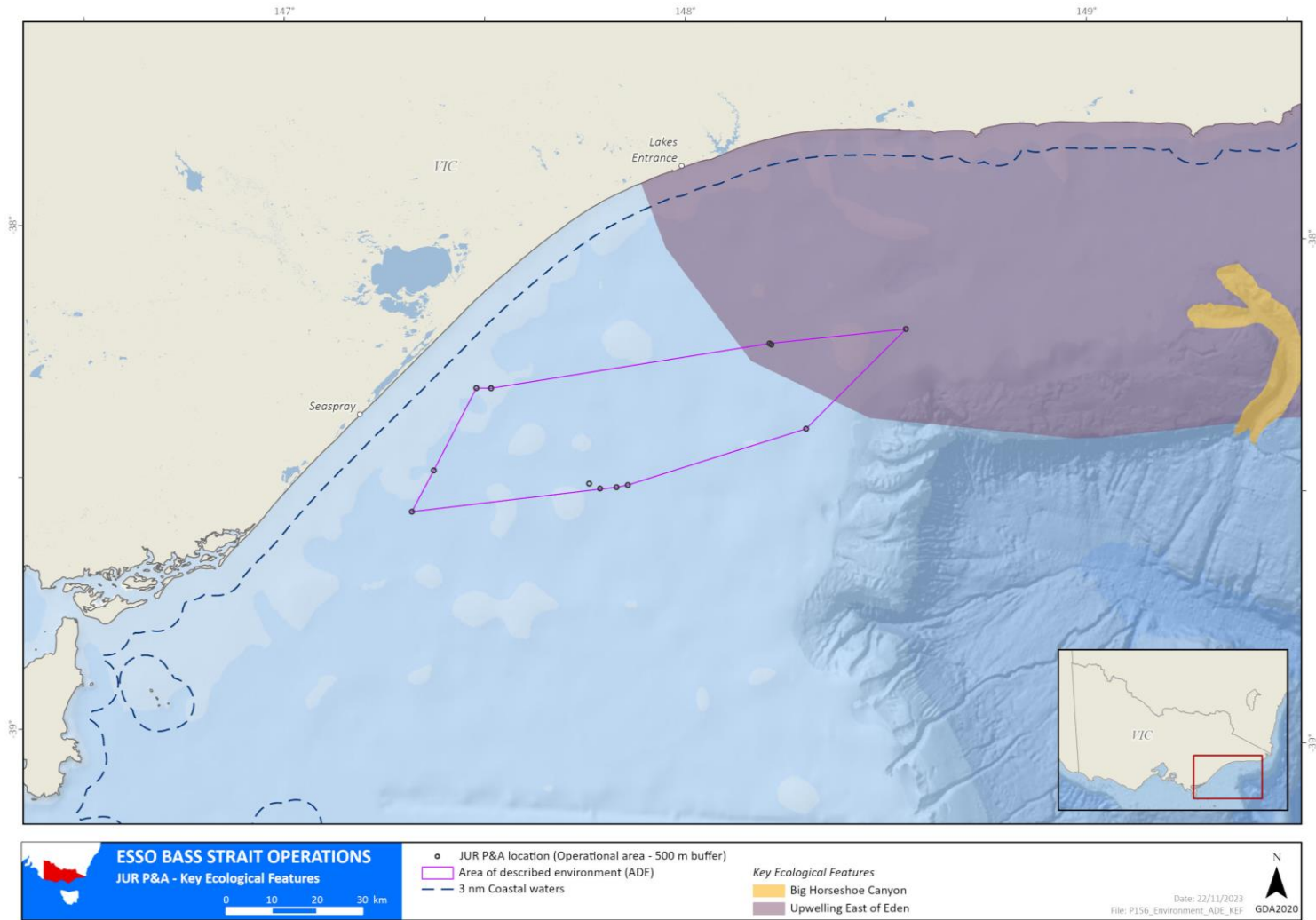


Figure 3-7 KEFs within the ADE

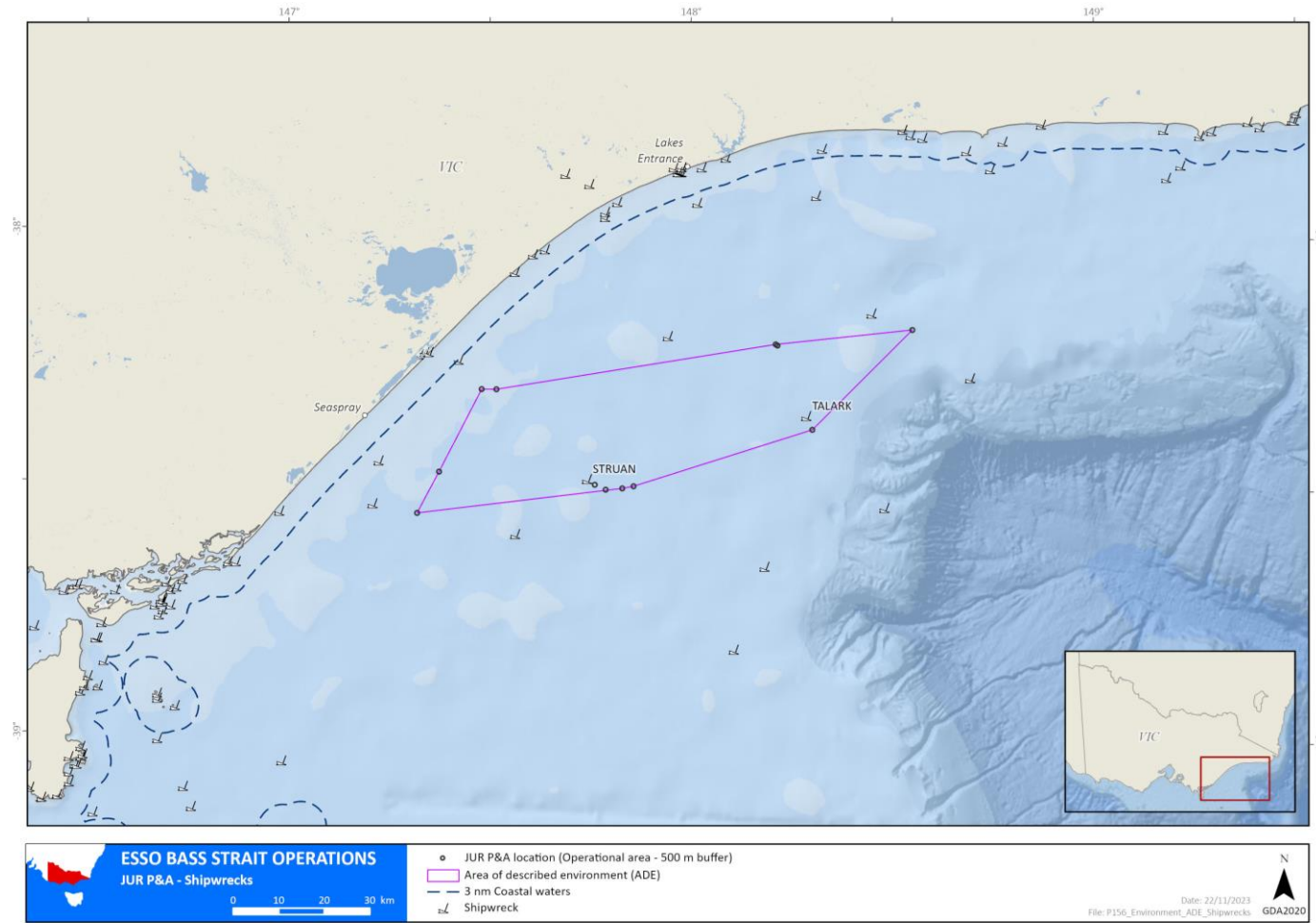


Figure 3-8 Shipwrecks within the ADE

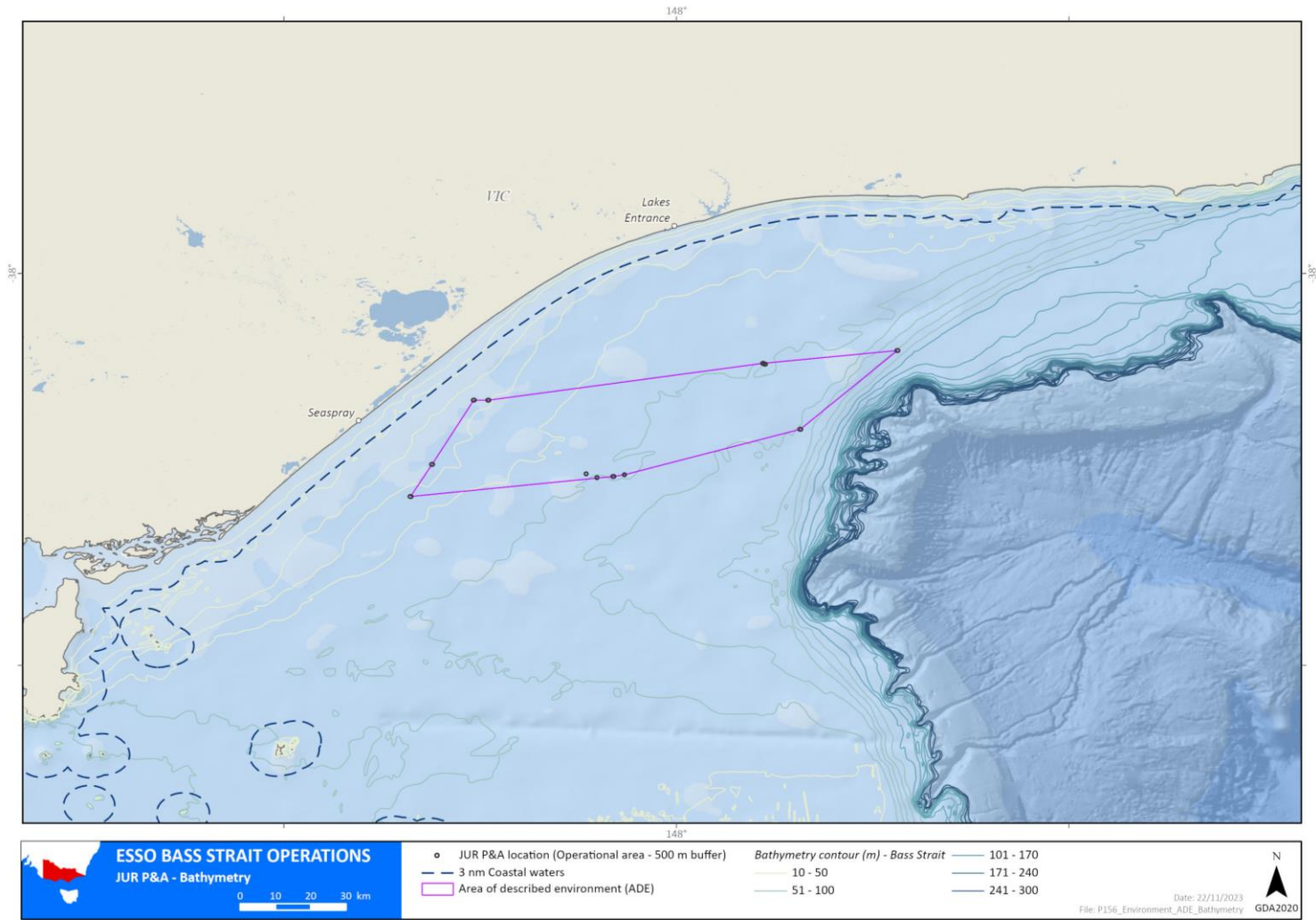


Figure 3-9 Bathymetry within the ADE

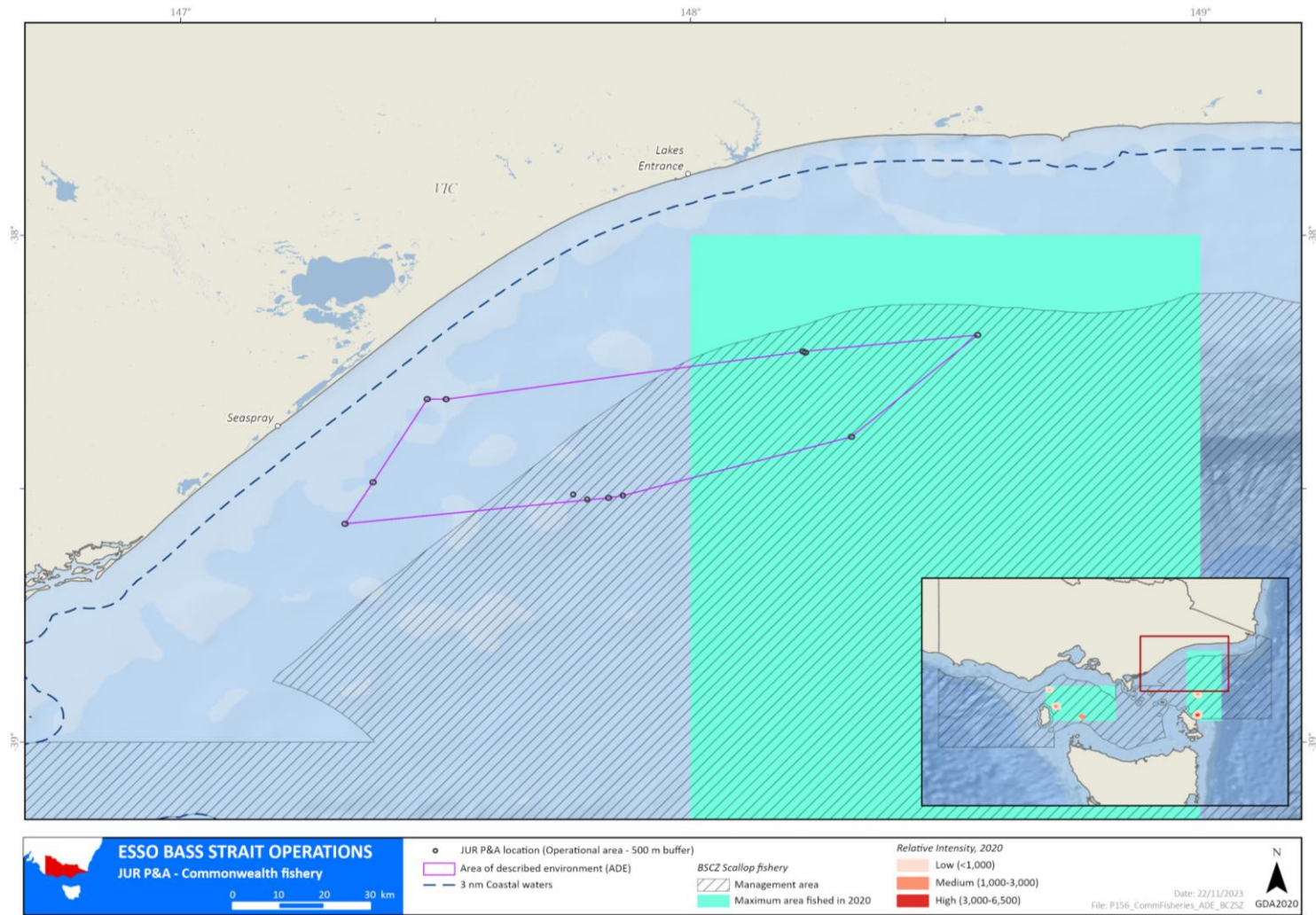


Figure 3-10 Bass Strait Central Scallop Zone Fishery jurisdiction and 2020 fishing intensity overlapped by the ADE

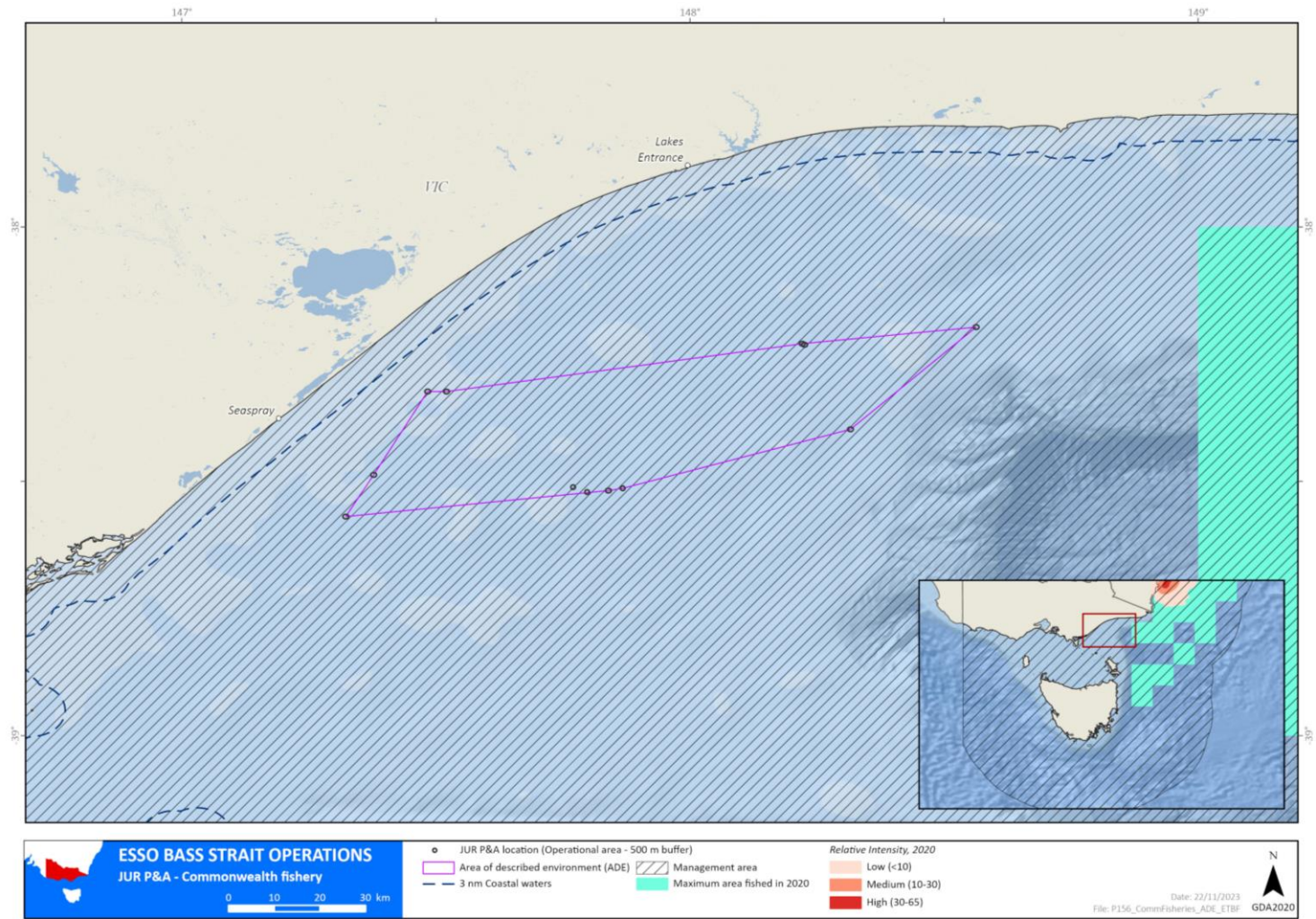


Figure 3-11 Eastern Tuna and Billfish Fishery jurisdiction and 2020 fishing intensity overlapped by the ADE

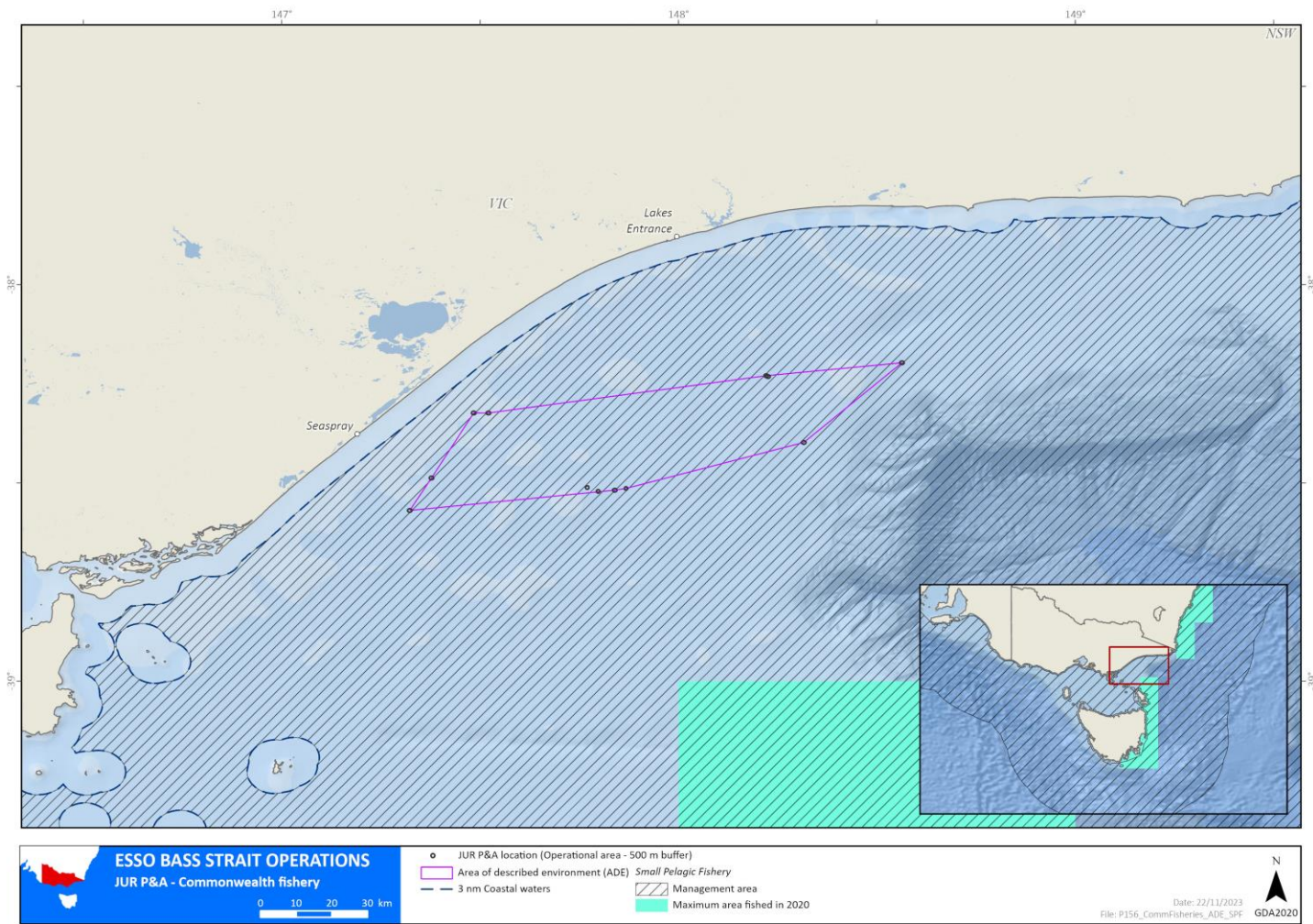


Figure 3-12 Small pelagic fishery jurisdiction and 2020 fishing intensity overlapped by the ADE

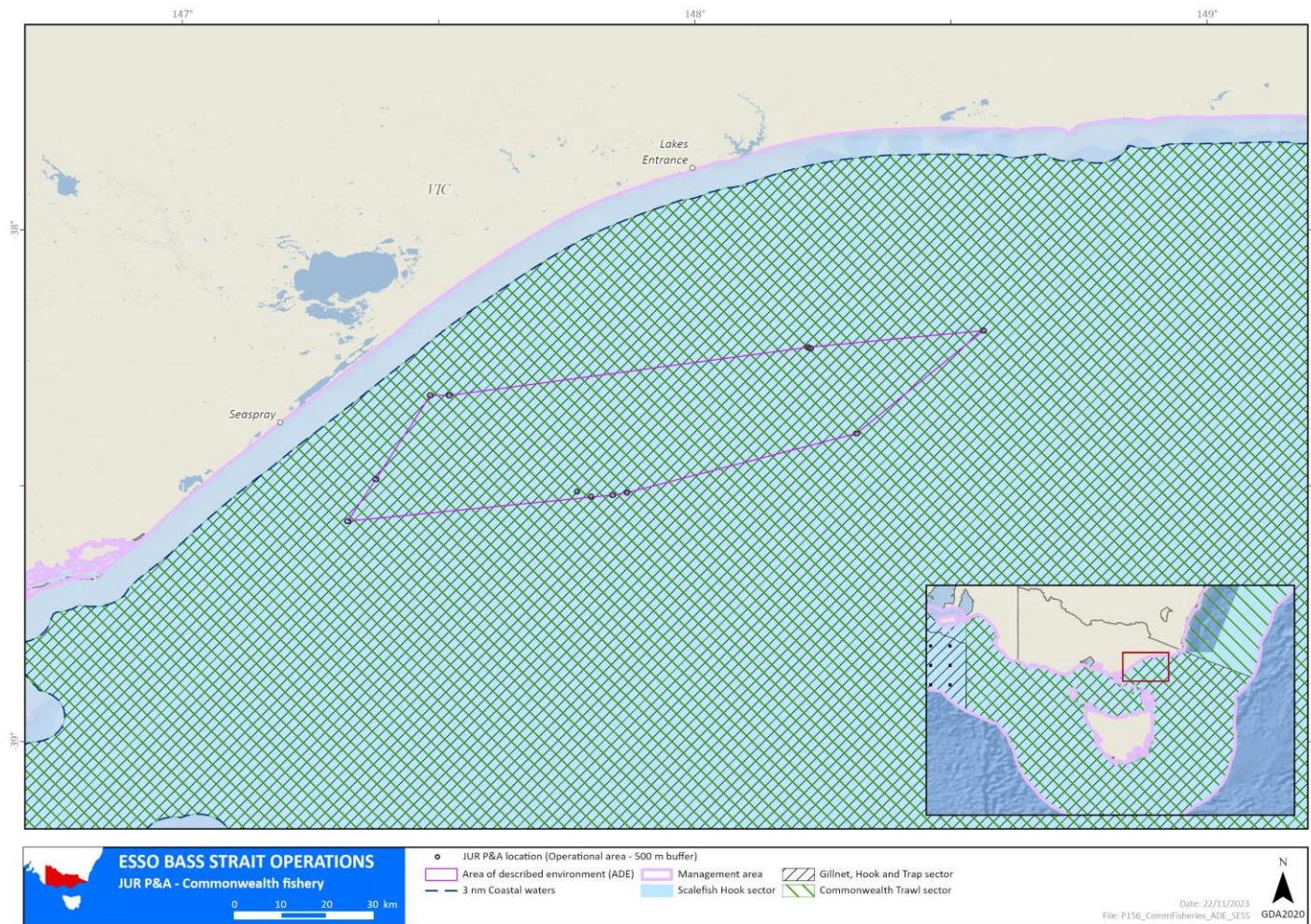


Figure 3-13 Southern and Eastern Scalefish and Shark Fishery jurisdiction overlapped by the ADE

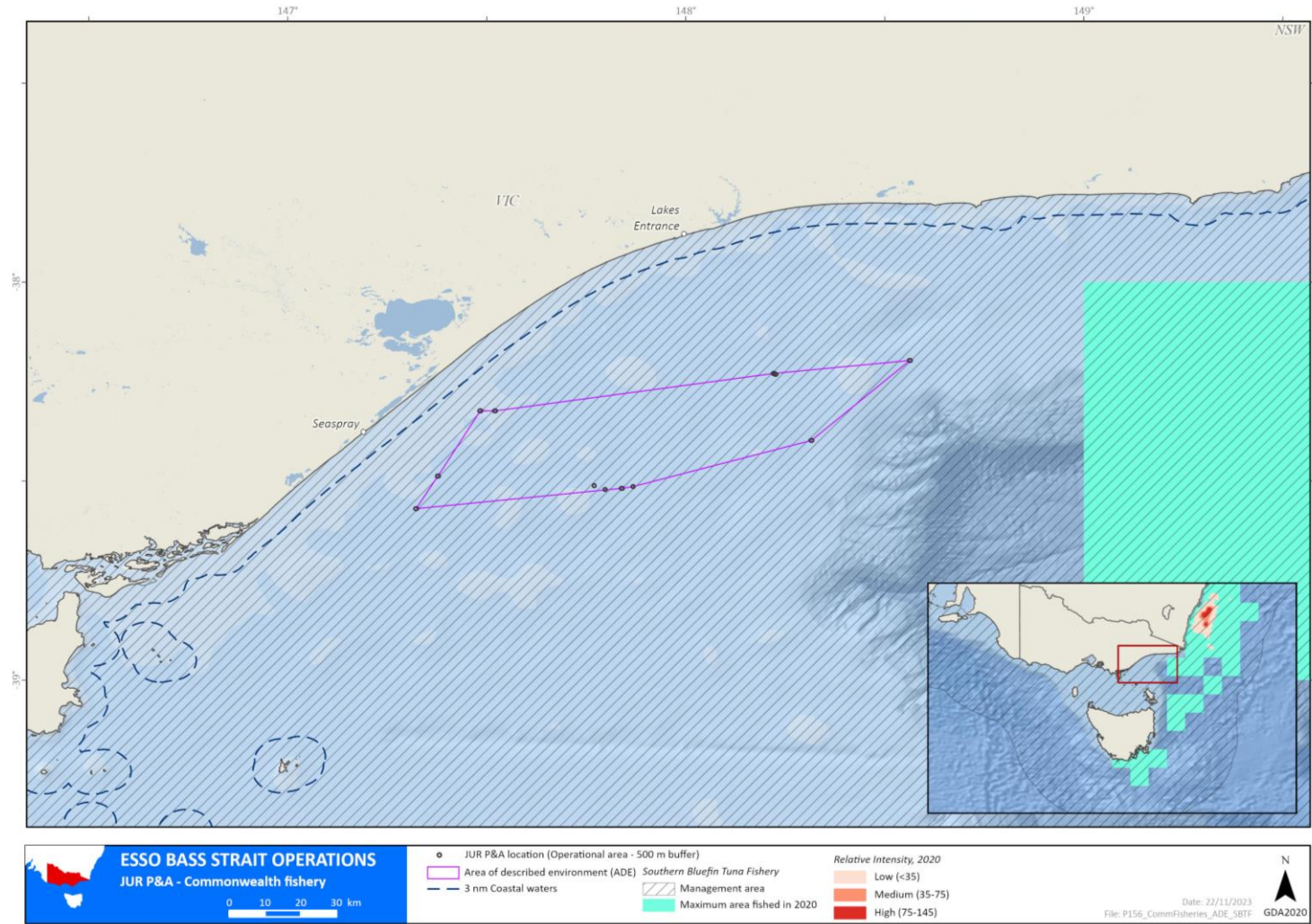


Figure 3-14 Southern Bluefin Tuna Fishery jurisdiction and 2020 fishing intensity overlapped by the ADE

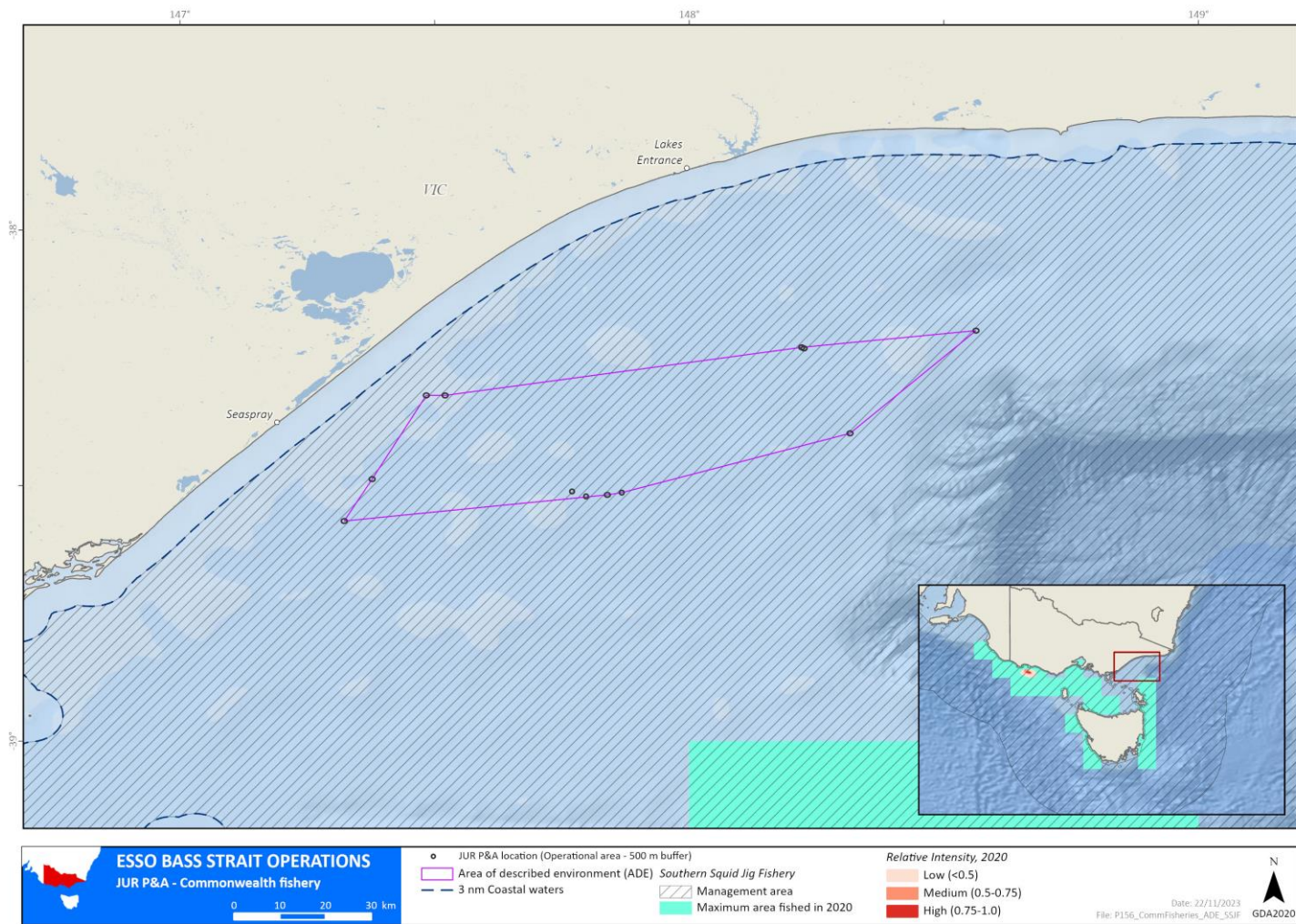


Figure 3-15 Southern Squid Jig Fishery jurisdiction and 2020 fishing intensity overlapped by the ADE

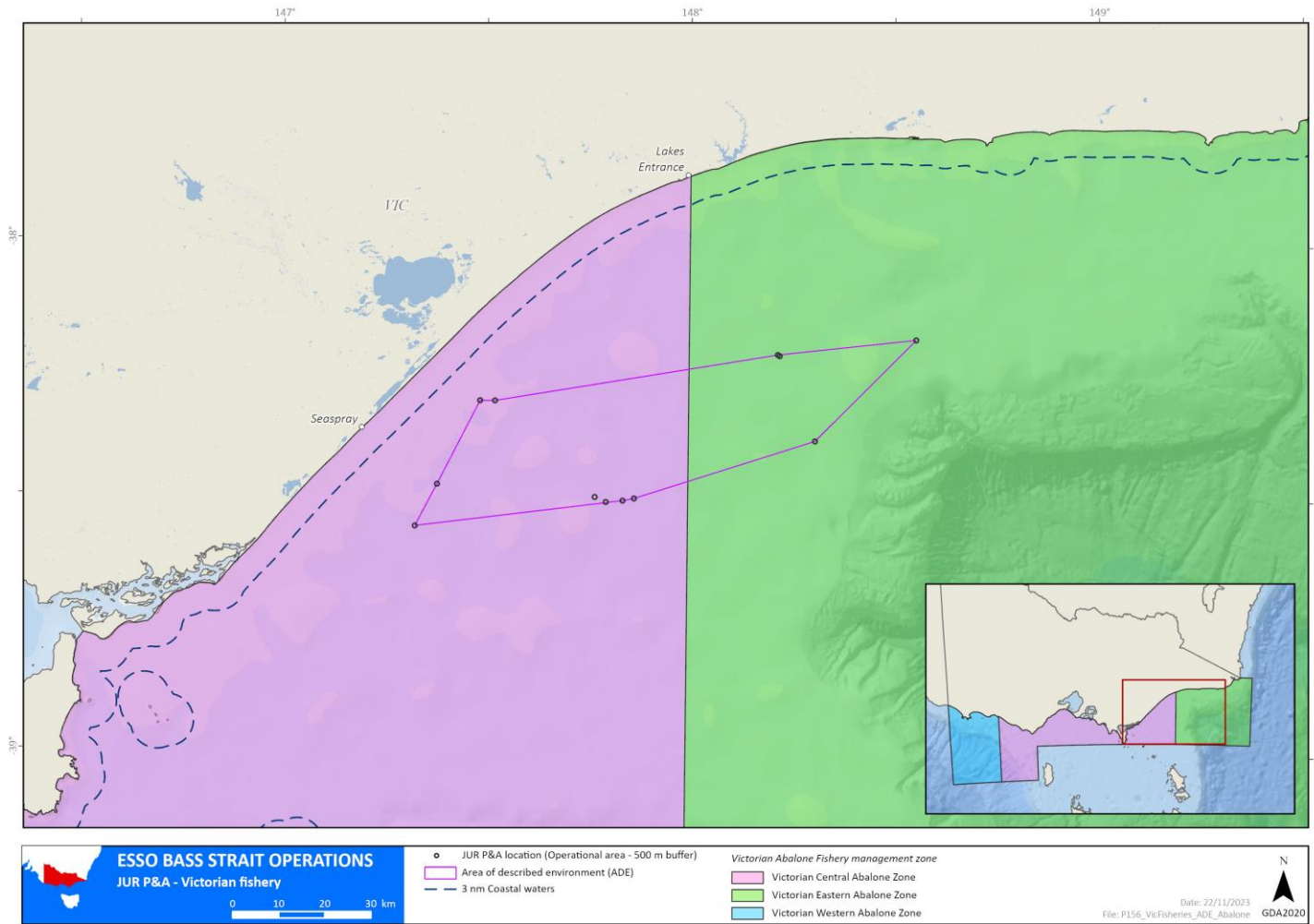


Figure 3-16 Victorian abalone fishery overlapped by the ADE

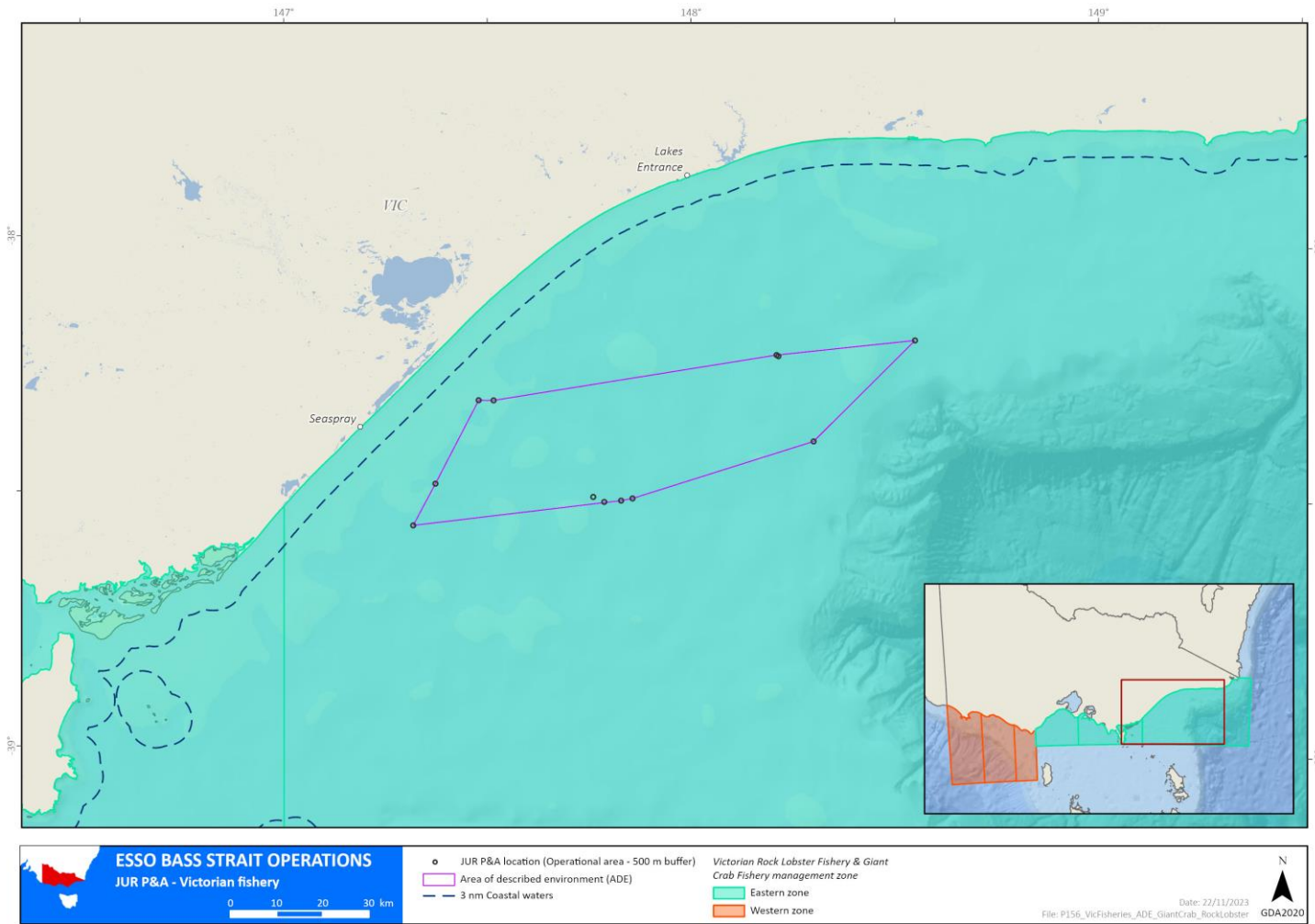


Figure 3-17 Victorian rock lobster and giant crab fishery overlapped by the ADE

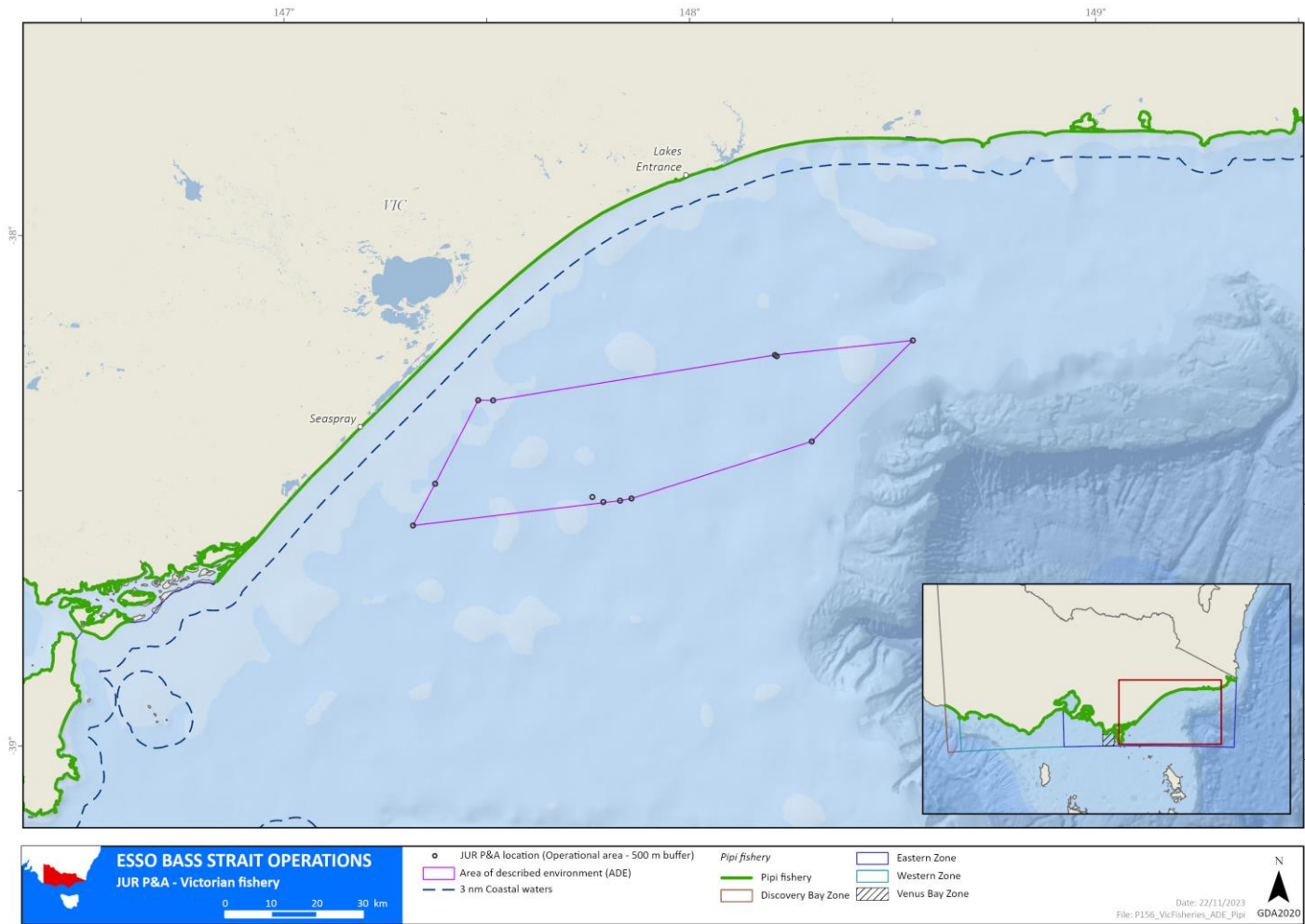


Figure 3-18 Victorian pipi fishery overlapped by the ADE

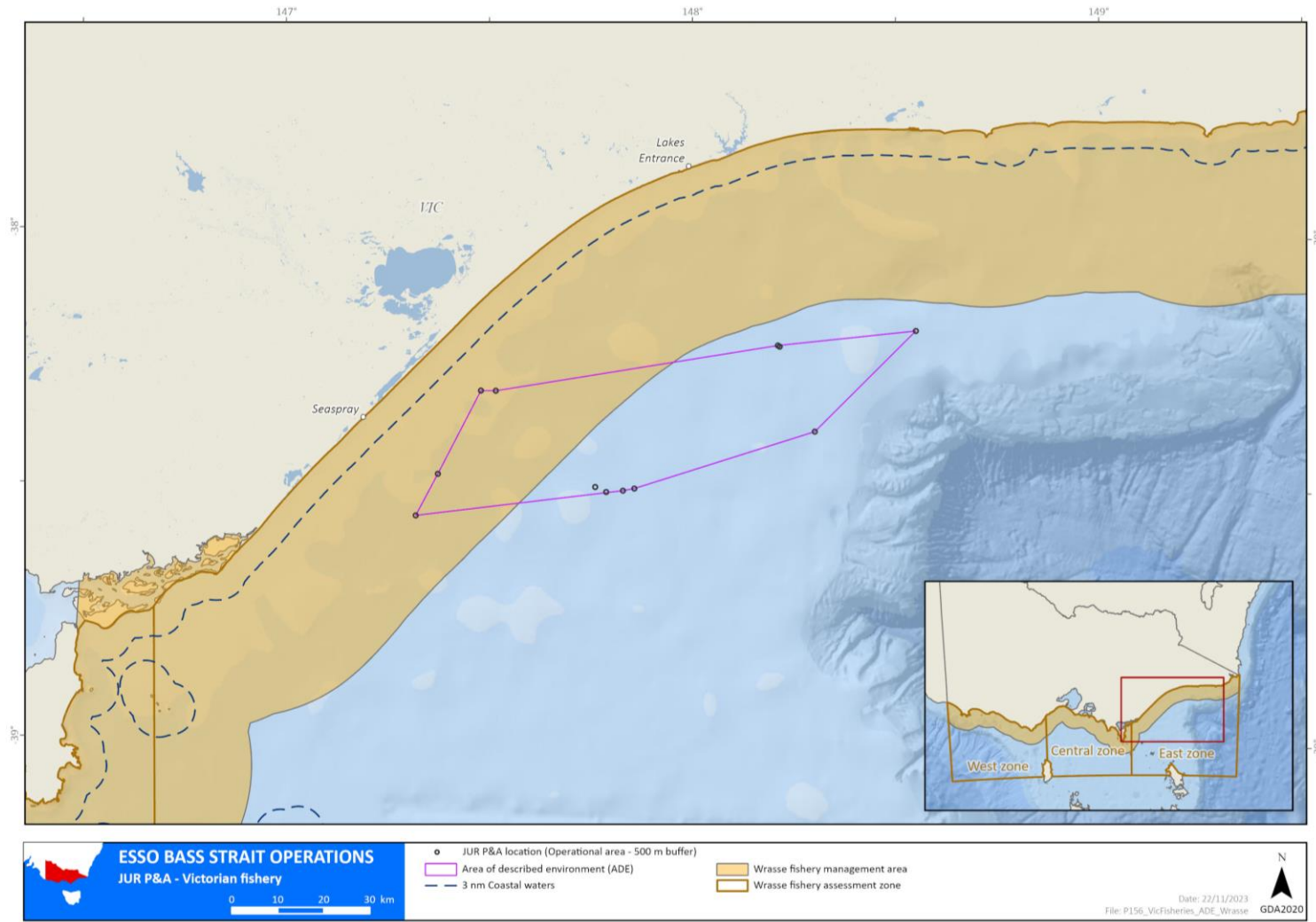


Figure 3-19 Victorian wrasse fishery overlapped by the ADE

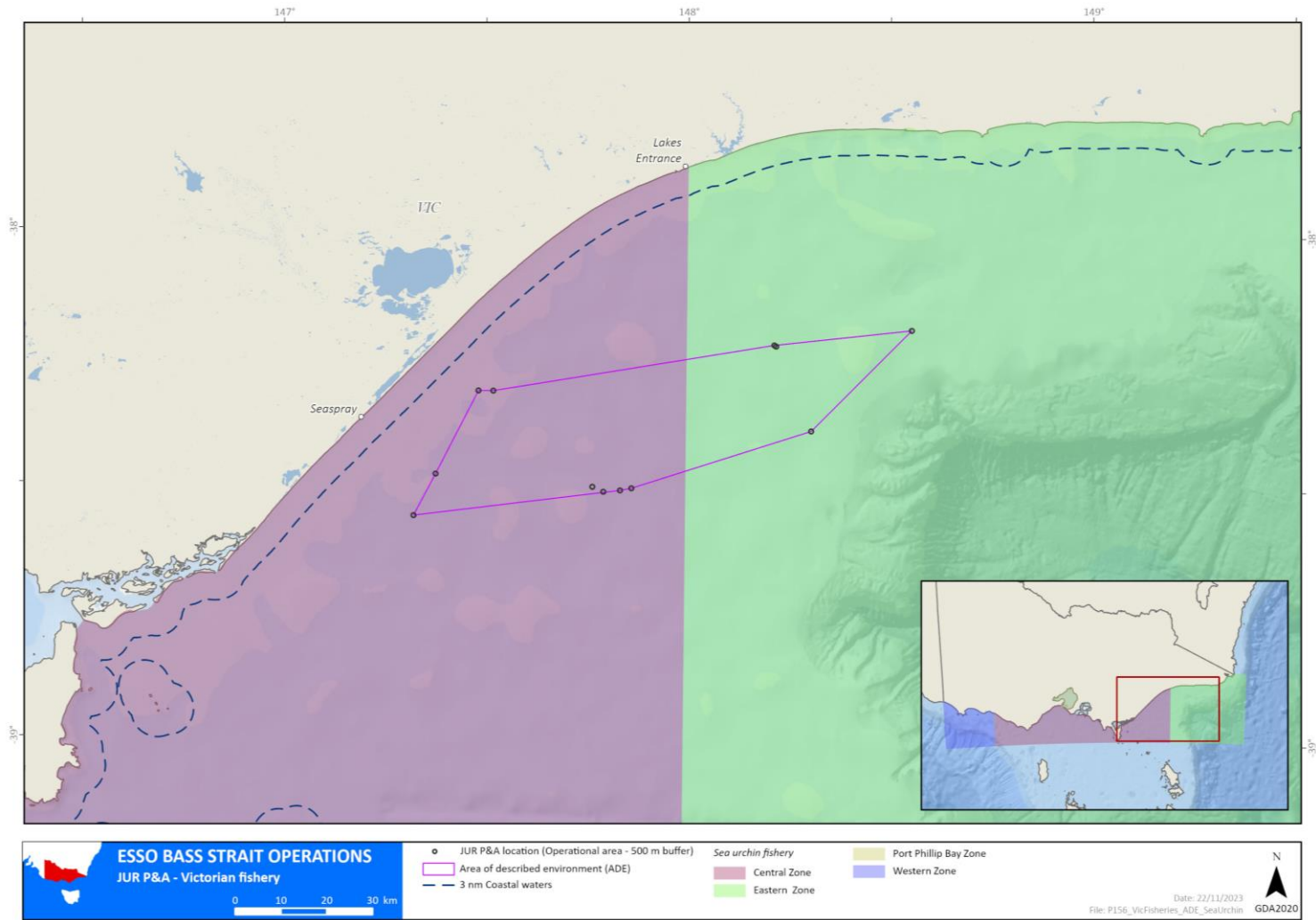


Figure 3-20 Victorian sea urchin fishery overlapped by the ADE

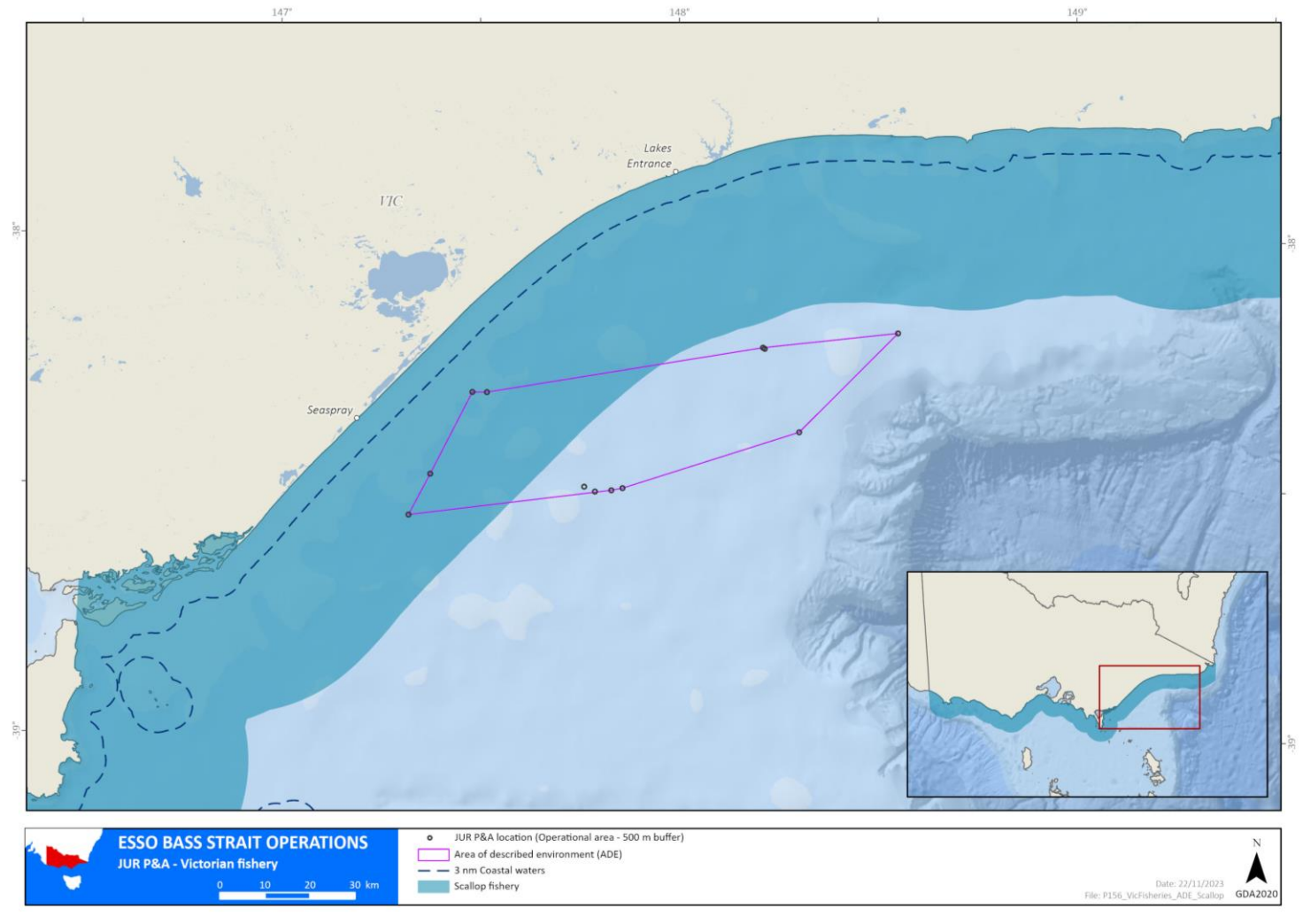


Figure 3-21 Victorian scallop fishery overlapped by the ADE

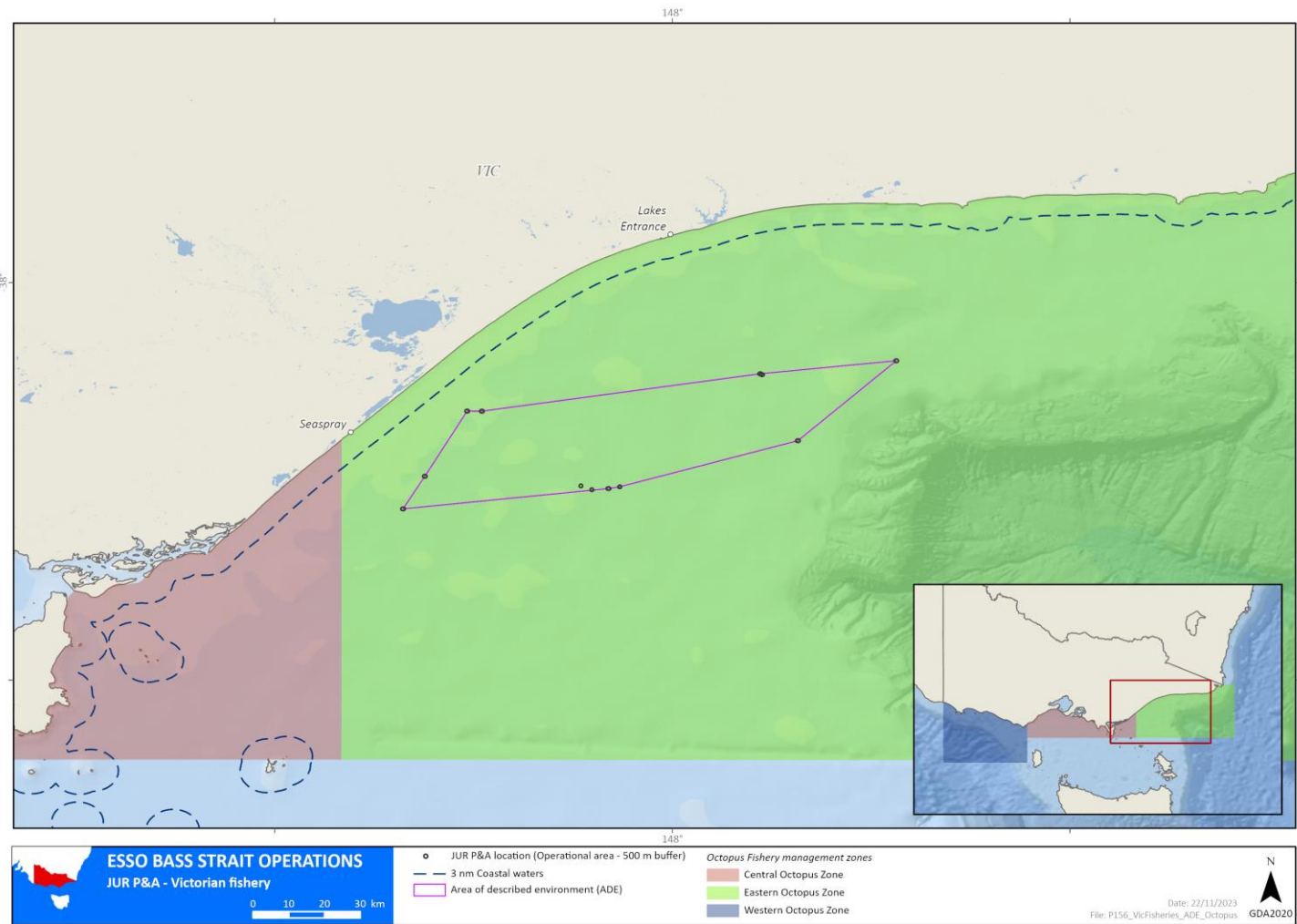


Figure 3-22 Victorian octopus fishery overlapped by the ADE

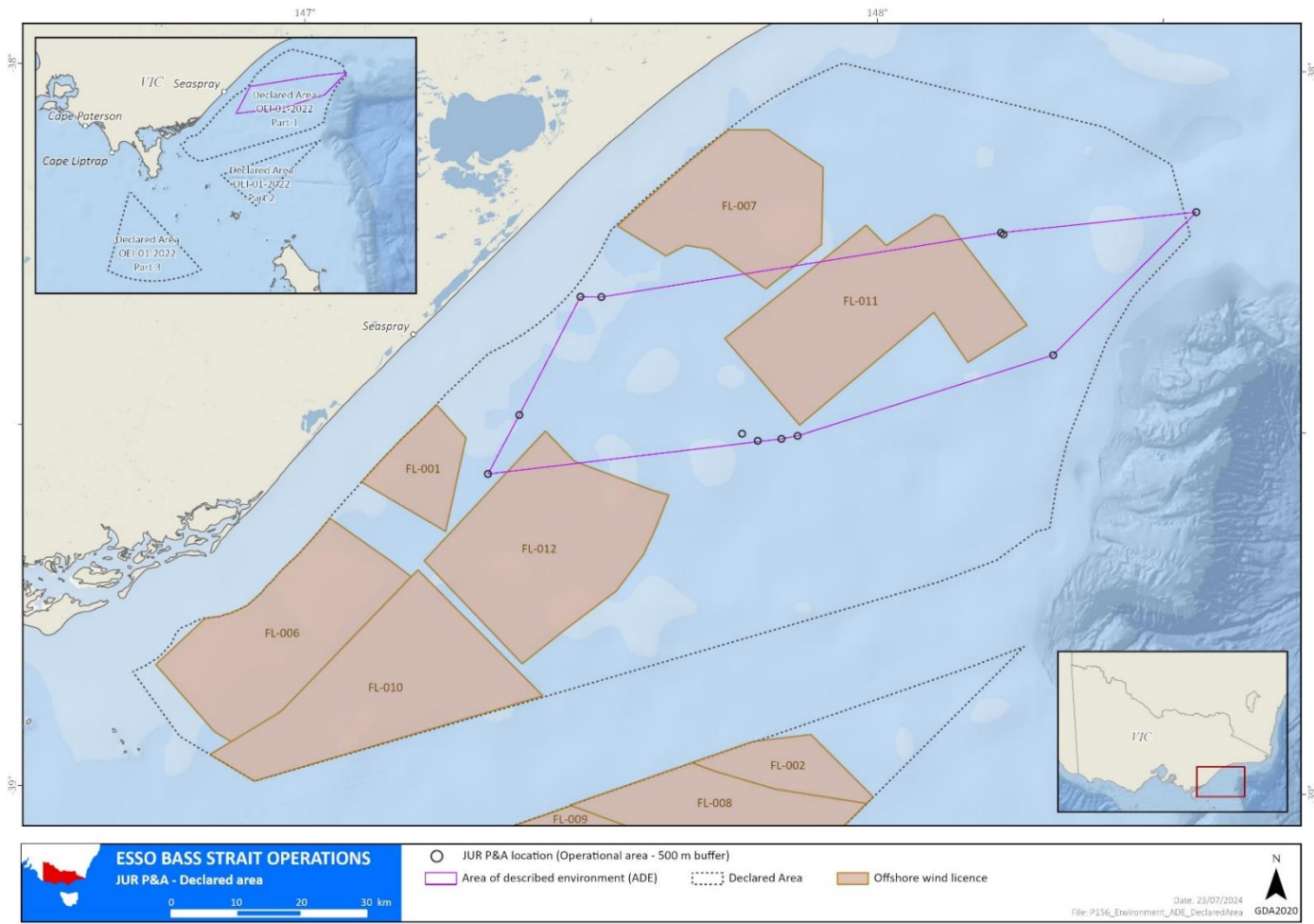


Figure 3-23 Offshore renewable energy declared area and licence areas overlapped by the ADE.

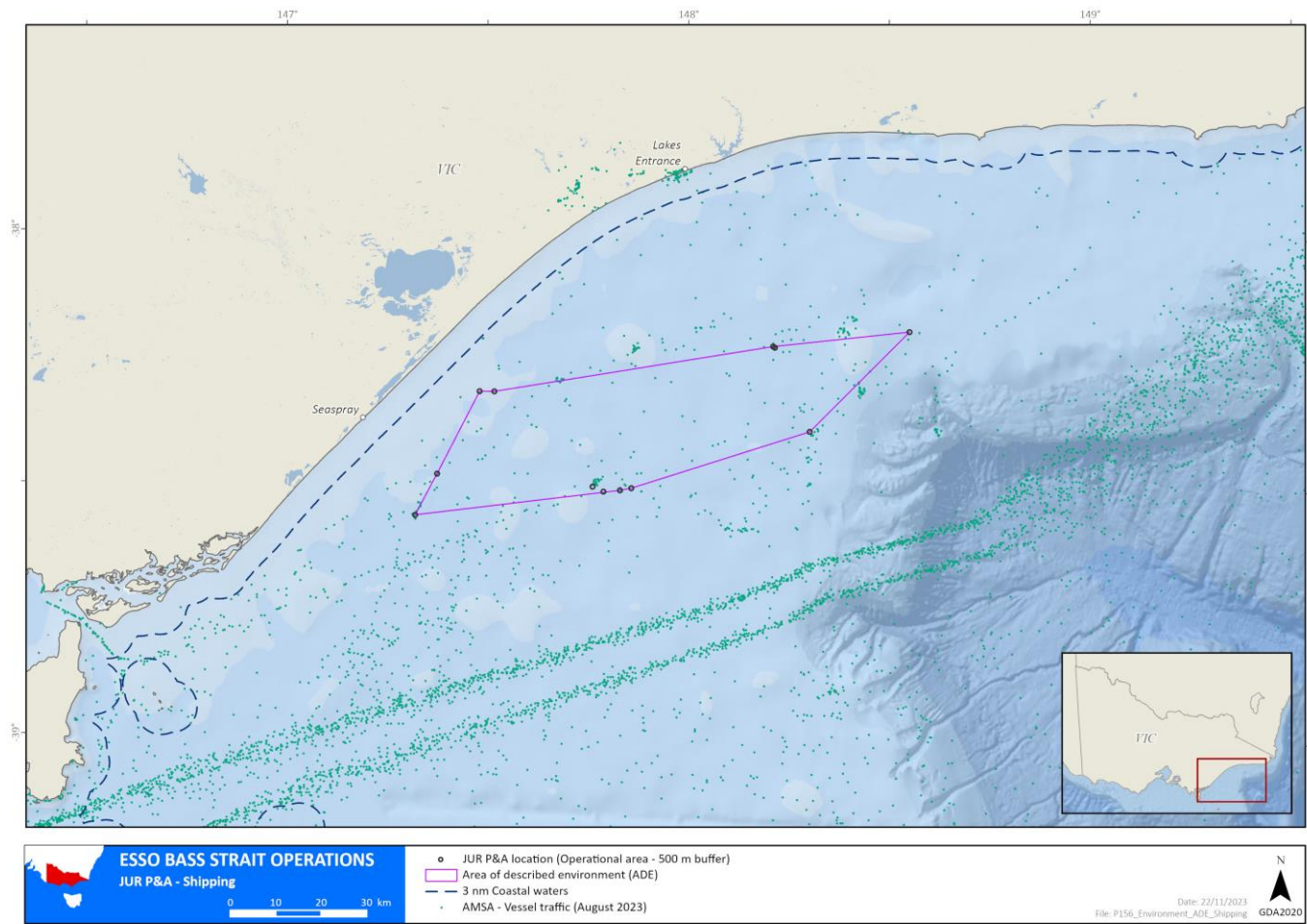


Figure 3-24 Shipping traffic within the ADE

4 Relevant person's consultation

Esso has undertaken consultation in the course of preparing this EP in accordance with regulation 25 of the OPGGS (Environment) Regulations.

The judgements of the Federal Court of Australia Decision (Tipakalippa v National Offshore Petroleum Safety and Environmental Management Authority (No 2), 2022) and Appeal (Santos NA Barossa Pty Ltd v Tipakalippa, 2022) represents the law regarding requirements for consultation in accordance with the OPGGS (Environment) Regulations.

Following the Appeal and the Federal Court of Australia decision in Cooper v National Offshore Petroleum Safety and Environmental Management Authority (No 2) [2023] FCA 1158 on 28 September 2023, Esso revised its methodology (refer to Section 4.2) to better reflect the intent of the judgements.

This Chapter provides the outcomes of consultation conducted up to and including information received by 4 November 2023. During the consultation process, no feedback or requests for further information were received.

Over the past 50 years of operations in Bass Strait, Esso has established relationships with relevant persons identified in the Bass Strait Operations EP (AUGO-EV-EMM-002) and activity-specific EP submissions, as well as the broader public and other interested parties.

Esso recognises and respects the important contribution of relevant persons, including First Nations people, throughout offshore petroleum activities. Esso is committed to ensuring that relevant persons are identified and given sufficient information and reasonable time for consultation to allow them to make an informed assessment of the possible consequences of a proposed petroleum or greenhouse gas activity on them.

The consultation process outlined in this EP allows Esso to ascertain, understand and address all the environmental impacts and risks that might arise from its proposed activity. The consultation process also allows Esso to receive information that the Company might not otherwise receive, and to use this information to enhance understanding of the environment, people, communities, heritage values, and social and cultural features that may be affected by the proposed activities and to inform decision-making.

For the purposes of this EP, Esso defines *consultation* as a process of communication that leads to a decision where the views of relevant persons have been taken into account. Whereas *engagement* aims to build long term relationships by exchanging information. While Esso is required by legislation to consult with relevant persons, Esso is also committed to engaging with relevant persons and continuing to further develop relationships already established.

Esso will consider and adopt appropriate measures, in response to the matters raised by relevant persons, in the management of environmental impacts and risks as part of the EP development process.

This Chapter describes Esso's approach to consultation and engagement, and the steps taken to develop and maintain consistent, constructive and effective relationships with relevant persons associated with this EP.

More specifically, this Chapter outlines in detail:

- Section 4.1 Consultation requirements – outlines the applicable consultation and engagement standards and legislative requirements, including Esso's definition of relevant persons.
- Section 4.2 Esso's consultation methodology – describes Esso's methodology used to identify and consult with relevant persons for any EP.
- Section 4.3 Methodology as applied to the scope of this environment plan – details how Esso has applied the methodology (as described in Section 4.2) for this specific EP and the activities it proposes. This includes:
 - the relevant persons identified under the scope of this EP and the verification process applied
 - communication and consultation methods used to ensure sufficient information is provided in relation to the scope of this EP
 - how the consultation process is planned and tailored as appropriate to the nature and scope of this EP
 - a description of consultations undertaken to-date

- a summary of how feedback received to-date have been considered, addressed and communicated.

4.1 Consultation requirements

Esso is committed to undertaking all consultation and engagement activities in accordance with applicable Australian legislation and ExxonMobil standards.

4.1.1 Legislative requirements

For each EP, Esso undertakes consultation in accordance with legislative requirements, including case law. As such, Esso's consultation processes are designed to meet obligations specified in Section 280 and Section 460 of the OPGGS Act and in the context of the objects of Regulation 4 of the OPGGS (Environment) Regulations.

Consultation-specific requirements are covered in several of the OPGGS (Environment) Regulations, as discussed in the following sections.

4.1.1.1 Regulation 25

Esso categorises relevant persons into five categories aligned to Regulation 25 (1)(a)-(e), as shown in Table 4-1.

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.

Per Regulation 25 (2), Esso defines 'sufficient information' to include:

- sharing information that is tailored to a relevant persons' needs
- detailing the proposed activity and any impacts and risks that may be relevant to them
- describing the control measures proposed to manage the potential impacts to them.

Esso considers the functions, interests or activities of relevant persons and the impacts and risks that affect them when determining information requirements and acknowledges that information may need to be provided in an iterative manner.

Following guidance provided in *Consultation in the course of preparing an environment plan* (NOPSEMA, 2023), Esso acknowledges that:

"The phrase 'functions, interests or activities' in reg 25(1)(d) should be broadly construed as this approach best promotes the objects of the Regulations, including that offshore petroleum and greenhouse gas activities are carried out in a manner consistent with the principles of ESD14.

Functions: Refers to 'a power or duty to do something'.

Activities: To be read broadly and is broader than the definition of 'activity' in regulation 5 of the Environment Regulations and is likely directed to what the relevant person is already doing.

Interests: To be construed as conforming with the accepted concept of 'interest' in other areas of public administrative law. Includes 'any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation'."

In accordance with Regulation 25 (3), Esso determines a reasonable period for consultation in relation to this EP, as discussed in Table 4-1.

In accordance with Regulation 25 (4), Esso will inform each relevant person that they may request that particular information they provide in the consultation not be published. Esso is committed to honouring this request and will not publish information subject to such a request.

4.1.1.2 Regulation 26

In accordance with Regulation 26 (8), sensitive information relating to relevant persons and the full text of any response by a relevant person to consultation under Regulation 25 in the course of preparation of the EP, will only be included in the 'sensitive information part' and not anywhere else in the EP. The 'sensitive information part' is removed prior to publication in accordance with Regulation 28 (1).

4.1.1.3 Regulation 34

In accordance with Regulation 34 (g), this whole Chapter is intended to demonstrate how Esso has carried out the consultations required by Division 3. In developing this EP, Esso has also considered the guidance provided in *Environment Plan Assessment* (NOPSEMA, 2020), *Environment Plan decision making* (NOPSEMA, 2021) and *Environment plan content requirement* (NOPSEMA, 2020).

4.1.1.4 Regulation 22

In accordance with Regulation 22 (15), Esso ensures appropriate consultation is conducted with relevant departments, authorities and ministers through their identification as relevant persons under Categories 25 (1)(a), (b) and (c) (Refer to Section 4.2.4.1).

Other persons or organisations with functions, interests or activities are identified as relevant persons under Category 25 (1)(d) (Refer to Section 4.2.4.2).

In addition, Esso may categorise any other person or organisation as a relevant person under 25 (1)(e) (Refer to Section 4.2.4.3).

Esso also conducts broad-based information sharing engagements as outlined in Section 4.3.6.

4.1.1.5 Regulation 24

In accordance with Regulation 24 (b), Esso provides a report on all consultations undertaken with any relevant person in accordance with Regulation 25 (see Appendix E-3). The report contains:

- a summary of each response made by a relevant person; and
- an assessment of the merits of any objection or claim about the adverse impact of each activity to which the environment plan relates; and
- a statement of the titleholder's response, or proposed response, if any, to each objection or claim; and
- a copy of the full text of any response by a relevant person.

4.1.1.6 Case law

The judgements from the Decision (*Tipakalippa v National Offshore Petroleum Safety and Environmental Management Authority* (No 2), 2022) and Appeal (*Santos NA Barossa Pty Ltd v Tipakalippa*, 2022) are considered law and constitute the legal requirements of consulting with relevant persons.

This chapter is intended to demonstrate how Esso has consulted, in a way that complies with the judgements made in the Decision and the Appeal.

In the Appeal (Paragraphs 96 & 104), The Federal Court of Australia has noted that there is no shortage of guidance in decisions on consultation processes under *the Native Title Act 1993*, which is illustrative of how a seemingly rigid statutory obligation to consult persons holding a communal interest may operate in a workable manner. The *Native Title Act 1993* authorities require reasonable notice to group members, but not exhaustive communications with each and every person.

Esso also implements the guidance outlined in *Consultation in the course of preparing an environment plan* (NOPSEMA, 2023), which was revised to incorporate the judgements.

4.1.2 ExxonMobil standards

In accordance with ExxonMobil Operations Integrity Management System (OIMS) 10-1, Esso has developed a consultation and engagement methodology that enables Esso to:

- ensure every effort is made to identify relevant persons
- undertake a verification process to ensure all representatives of relevant persons are a true representation/advocate of the views of their constituents and can be relied upon to faithfully communicate the results of engagements back to their constituents
- ensure relevant persons, especially those who are directly impacted, are consulted on matters that may affect them
- ensure that consultation is genuine and provides a meaningful two-way dialogue to develop and maintain consistent and constructive relationships with relevant persons to further understand potential environmental, social and economic impacts

- pursue engagement with relevant persons using a level of effort commensurate with the nature and scale of the activity
- keep relevant persons informed with respect to their specific interests, functions or activities
- encourage relevant persons to assess the information provided to them and respond to Esso with any feedback including questions, issues, concerns, suggestions, objections and/or claims
- maintain confidence of relevant persons in Esso and its activities through ongoing open, informative, inclusive and timely communications, wherever possible.

Implementation of the consultation methodology provides a mechanism by which Esso can:

- meet regulatory obligations and align with industry best practice consultation and engagement methods
- review and update the consultation methodology to reflect any changes to applicable laws, best practices or standards
- provide meaningful information in a format and language that is readily understood and tailored to the needs of relevant persons and groups
- provide information within an adequate timeframe to inform decision-making
- ensure consultations are based on open communication that is transparent, collaborative, inclusive and are conducted with integrity to foster respect and trust
- disseminate information in formats, methods and locations that make it easy for relevant persons to access
- respect local traditions and the relevant person's preferred ways of doing things
- establish two-way dialogue that gives all relevant persons the opportunity to exchange views and information, to listen, and to have their feedback heard and addressed
- seek inclusiveness in representation of views, including minority and special interest groups
- develop clear mechanisms for receiving, documenting, and responding to feedback
- incorporate feedback from relevant persons into the program design and providing clear and transparent reporting back to relevant persons in a reasonable timeframe.

Esso recognises First Nations people as the Traditional Custodians of the land and waters in which the company operates and acknowledges and pays respect to their Elders – past, present and emerging.

Esso understands that First Nations people see no distinction between the land and the sea, considering it all as a part of their Country. This understanding aligns with the regulatory guidance (NOPSEMA, 2023), which states "A connection of traditional owners with sea country may constitute an interest for the purposes of reg 11A (1)(d)."

Esso continues to identify and attempt consultations with environmentally focused non-government organisations (eNGOs) and other environmental protection and advocacy groups.

4.2 Esso's consultation methodology

This section provides a detailed methodology for identifying and consulting with relevant persons, which is to be followed when developing a new EP or a revision to an EP for an offshore activity.

It covers the:

- process for identifying relevant persons applicable to an offshore activity that requires a new EP or a revision to an EP under the OPGGS (Environment) Regulations
- the process for classification of relevant persons based on their function, interest or activities
- preparation of appropriate consultation materials and forms of consultation for each relevant person identified
- process of consultation including assessment of information and responses received.

For specific information on how this process was undertaken in relation to this EP, refer to Section 4.3.

4.2.1 Definition

To ensure a consistent approach to identifying and consulting with relevant persons in relation to offshore EPs, the definitions included in Table 4-1 have been used as the basis for this methodology.

Table 4-1 Definitions

Term	Definition
Activities	In relation to sub-regulation 25 (1)(d), activities are considered to be what other persons or organisations are already doing.
Area To Be Avoided (ATBA)	The boundary of which commences at the most easterly intersection of the coastline of the State of Victoria at mean low water by the parallel of Latitude 38° 14' 54.50" South and runs thence south-easterly along the geodesic to the point of Latitude 38° 34' 54.49" South, Longitude 147° 44' 04.61" East thence along the coastline of the State of Victoria at mean low water to the point of commencement.
Claims	Evidence provided that suggests there are potential adverse impacts from the petroleum or greenhouse gas activities to which the EP relates.
Consultation	Targeted and tailored information provided to enable effective consultation on a specific planned activity within a defined timeframe.
Consultation period	Esso generally defines the consultation period during the development of an EP as being 30 days, subject to the nature and scale of the proposed activity.
Environment that maybe affected (EMBA)	Oil spill modelling is used to determine the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of any spill and is used for planning purposes to ensure that all social and environmental sensitivities are acknowledged, described and considered in the development of the EP.
Engagement	Ongoing relationship building or general engagement not related to a specific activity or defined timeframe.
Environment	OPGGS (Environment) Regulations defines this as: (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 includes (e) the social, economic and cultural features of the matters mentioned in paragraphs (a), (b), (c) and (d).
Functions	In relation to sub-regulation 25 (1)(d), functions refer to a power or duty to do something.
Geographical consultation boundary	The geographical areas (OA, ATBA and EMBA) used as the basis for identifying relevant persons.
Interests	In relation to sub-regulation 25 (1)(d), interests represent a connection to the values described in the EP. Any interest possessed by an individual, whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation. An interest does not extend to general public interest in an activity.
objection	A reason or argument that asserts that there are potential adverse impacts arising from the petroleum or greenhouse gas activities to which the EP relates.

Term	Definition
Operational Area (OA)	500-m PSZ around platforms subsea installations
Petroleum/green house gas activity	A planned offshore petroleum or greenhouse gas storage activity for which an EP is required. This also includes activities undertaken in the event of an emergency condition such as oil spill response.
Reasonable period	<p>A reasonable time for relevant persons to identify the effect of a proposed activity on their functions, interests or activities and make a response detailing their objections or claims.</p> <p>Esso generally defines a reasonable period for a relevant person to review and provide an initial response (i.e. the consultation period) as being 30 days, subject to the nature and scale of the proposed activity.</p> <p>Where engagement with relevant persons is ongoing after this period, Esso will continue to engage with these persons until Esso believes that it has provided sufficient evidence/justification to close the consultation (i.e. they have been provided sufficient information and reasonable time).</p>
Relevant person	Can be a person, organisation, department or agency that falls within one of the classifications defined by sub-regulation 25 (1) of the OPGGS (Environment) Regulations.
Stakeholder	Stakeholder is a general use term and includes any person, group or organisation with an interest or concern in something. It includes those that may be affected in an immaterial or negligible way. Esso uses this terminology in general terms when describing those persons/organisations not deemed to be Relevant Persons e.g. a Stakeholder Database containing a broad and diverse range of relevant and non-relevant persons for multiple activities.
Unplanned activity/event	<p>Accidental release e.g. Loss Of Containment (LOC) of refined oils (collision) or LOC of reservoir hydrocarbons</p> <p>Covered by the Oil Pollution Emergency Plan (OPEP).</p>

4.2.1.1 Petroleum activity (planned activity)

The OPGGS (Environment) Regulations require that consultation be undertaken to ensure that persons who may be affected by a petroleum activity are given the opportunity to inform the titleholder how they may be affected and to allow the titleholder to assess and address any objections or claims about that activity in the preparation of environment submissions.

Regulation 5 of the OPGGS (Environment) Regulations defines a petroleum activity as "any operations or works in an offshore area carried out for the purpose of:

- (a) exercising a right conferred on a petroleum titleholder under the Act by a petroleum title; or
- (b) discharging an obligation imposed on a petroleum titleholder by the Act or a legislative instrument under the Act."

When identifying relevant persons, Esso considers which stakeholders perform a function in relation to – or have a function, activity or interest that may be affected by – the planned activity.

The planned activity for this EP is the P&A of 21 platform-based wells and five subsea wells in Commonwealth Waters, to install conductors from the platform at Marlin B and potentially undertake geotechnical survey work around the Bream wells. Therefore, in determining who is a relevant person for consultation, Esso sought to identify and consult with persons whose functions, interests or activities could be affected by the of activities described in Section 2 of this EP.

4.2.1.2 Unplanned event/activity (emergency conditions)

Relevant persons who may perform a function in Esso's planning for, or management of an unplanned activity, and whose information is integral to the development of emergency management plans, are engaged during the development of this EP and the OPEP.

Persons whose functions, interests or activities are within the PEA for the unplanned activity are provided with broad, high level information such as activity information bulletins and information regarding PEA and oil spill modelling.

If requested, consultation may include face-to-face engagements, phone calls, community meetings, specialist group meetings, community drop-in sessions. If no response is received no further consultation is required.

4.2.1.3 Geographical boundaries

Esso uses the following geographical boundaries to define EP consultation:

- OA: 500-metre PSZ around platforms subsea installations (as described in Section 2.1).
- Bass Strait ATBA: As described in Schedule 2 of the OPGGS Act.
- The EMBA: As described in Section 3.2.

4.2.2 Esso's approach to consultation

Esso's approach to consultation with relevant persons involves steps undertaken across four consultation Levels, as shown in Figure 4-1.

If Esso identifies a group of relevant persons that may be potentially affected, but is unable to confirm individual contact details as these are not ascertainable through normal mechanisms (e.g. website, associated government agencies, organisations or groups who hold these details or who can advise who these individuals are), the opportunity exists for such persons to contact Esso via the publicly accessible Esso Consultation Hub, consultation email or phone. Newspaper advertisements are also used to highlight activities so that individuals or groups can self-identify to Esso.

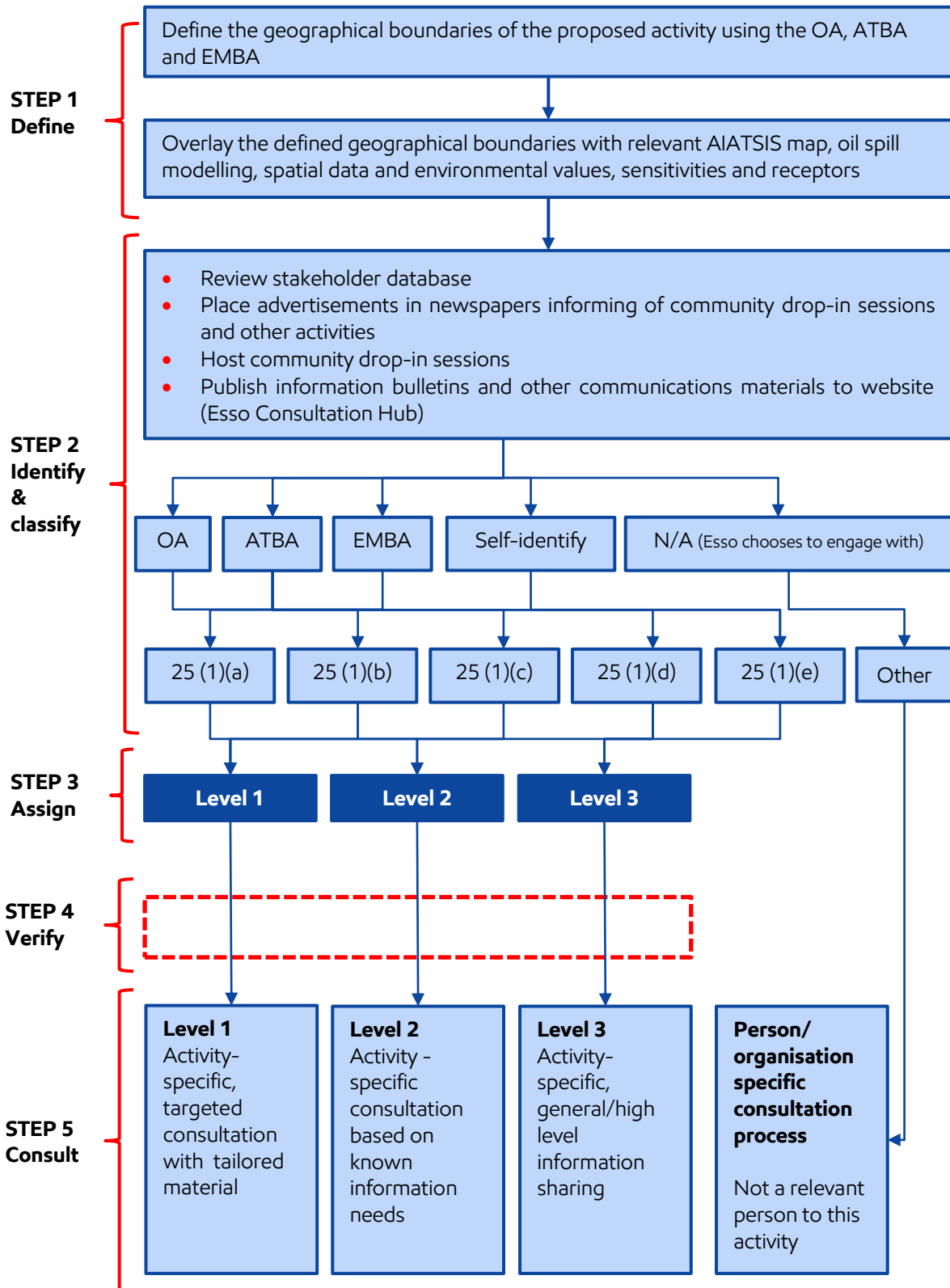


Figure 4-1 Esso’s approach to consultation

4.2.3 Step 1 – Define

When preparing for consultation for each new petroleum activity, Esso first identifies the geographic boundaries of the EP. As defined in Section 0, these geographic boundaries are the:

- OA
- ATBA
- EMBA.

Each of the defined geographical boundaries are then overlaid with relevant Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) map, oil spill modelling, spatial data and environmental values, sensitivities and receptors.

Esso must also outline the EP specifications for:

- activity description, which is compared to previous consultations undertaken for other Esso activities and/or facilities.
- scope of the EP, taking into consideration factors such as planned and unplanned impacts to environmental factors including air and water emissions, culturally sensitive areas, sea country and marine environments; and potential socioeconomic impacts including job creation throughout the supply chain
- environmental values and sensitivities of the proposed activity, including cultural heritage (world, national and local), sea country, wetlands of international significance (Ramsar), listed threatened species and listed migratory species, listed threatened ecological communities and Commonwealth marine areas
- timing of the proposed activity, including any seasonal changes.

After considering these specifications, Esso then identifies the anticipated key functions, interests and activities of relevant persons.

4.2.4 Step 2 – Identify and classify

Esso acknowledges that 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 (NOPSEMA, 2023).

The approach to consultation involves using the defined OA, ATBA and EMBA to identify relevant persons by geographical boundary. They are then classified in accordance with the regulatory definitions in Regulation 25 (1)(a)-(e) which includes five relevant persons classifications as follows:

- 25 (1)(a) – Each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP may be relevant. For Esso's operations in Bass Strait, this includes any Commonwealth department or agency that has responsibility for managing or protecting the marine environment from pollution. It may also include those with responsibilities for environmental and fisheries management, defence and communications, maritime/navigational safety, marine parks, and native title.
- 25 (1)(b) – the Department or the responsible State Minister, if the plan relates to activities in the offshore area or a State
- 25 (1)(c) – the Department of the responsible Northern Territory Minister – if the plan relates to activities in the Principal Northern Territory offshore area. This is not applicable for Esso Bass Strait Activities.
- 25 (1)(d) – A person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP. A connection of traditional owners with sea country may constitute an interest for the purposes of Regulation 11A (1)(d) classification. For Esso's operations in Bass Strait this includes First Nations groups, non-government organisations, worker unions and fishing groups. It may also include community groups and individuals.
- 25 (1)(e) - Any other person or organisation that the Esso considers relevant.

Specific processes for the identification of relevant persons are outlined in the following sections.

4.2.4.1 Methodology for identification of Regulation 25 (1) (a)-(c) relevant persons

The OPGGS (Environment) Regulations, Regulation 25 (1)(a)-(b) requires the identification of relevant persons in Commonwealth or State government departments or agencies who may have responsibilities either related to or impacted by the activities to be carried out under the EP.

Regulation 25 (1)(c) requires Esso to identify the department of the responsible State Minister.

Esso has a history of extensive and ongoing consultation for offshore activities in the Bass Strait spanning more than 50 years, meaning that most, if not all, Regulation 25 (1)(a)-(c) relevant persons are known to Esso.

The first step in identification is to review Esso's existing Stakeholder Database. This review involves comparing the 'activity description' to previous Esso activities and/or facilities to identify past consultations of a similar nature. This is then used to filter Esso's Stakeholder Database, providing a list of relevant persons for all past activities of a similar nature.

If Commonwealth or State departments, agencies or ministers change, Esso leverages existing relationships to ensure consistency of consultation.

4.2.4.2 Methodology for identification of Regulation 25 (1)(d) relevant persons

Identification of relevant persons consistent with Regulation 25 (1)(d) requires their functions, interests or activities to be understood and applied broadly taking into account how potential risks and impacts of the EP activity may affect them. This is achieved via several methods as outlined in the following sections.

REVIEW OF RELEVANT PERSONS PREVIOUSLY IDENTIFIED FOR OTHER ACTIVITIES

Given Esso's extensive history of consultation in the area, identification of relevant persons starts with a review of Esso's existing relevant persons database to generate a list of any persons, groups, and organisations with functions, interests or activities matching those defined for the EP.

ACTIVELY SEEK OUT NEW RELEVANT PERSONS

To ensure the broad capture of ascertainable persons and organisations who may have their functions, interests or activities affected by the activity (*Santos NA Barossa Pty Ltd v Tipakalippa, 2022*), Esso seeks to identify any new relevant persons through:

- using local knowledge of existing relationships to identify marine users and interest groups active in the area (e.g. indigenous groups, commercial fisheries, recreational fishers, other energy producers, local business, etc.)
- providing a link to the Esso Consultation Hub and Esso Consultation Questionnaire with existing relevant persons and asking them to share it with anyone who may be interested in Esso's activities
- seeking the advice of First Nations groups such as land councils and prescribed body corporates in relation to who and how other First Nations groups or individuals should be consulted as relevant persons whose interests may be affected by the activities
- searches of internet sources, including search engines, websites, social media platforms etc.
- members of the Company's local workforce providing suggestions of other potentially impacted relevant persons
- identified relevant persons providing recommendations of other potentially impacted relevant persons, through direct engagement and/or the Esso consultation Questionnaire
- guidance from the Regulator, other government agency/department, industry associations or bodies about other potentially relevant persons
- advertisements in newspapers and other relevant news sources (e.g. Koori Mail, local papers)
- hosting community drop-in sessions where members of the public can attend and review materials relevant to Esso's activities and ask questions of staff
- a review of legislation applicable to petroleum and marine activities
- active participation in industry bodies and collaborations e.g. Australian Energy Producers, Centre for Decommissioning Australia, National Energy Resources Australia, and the National Decommissioning Research Initiative
- leveraging existing relationships with relevant Commonwealth and state departments and agencies to identify other relevant stakeholders
- reviewing the relevant persons identified for other oil and gas EPs in the area.

Relevant persons identified through these means are added to the list generated by the review of the relevant persons database (per Section 4.2.4.1).

SELF-IDENTIFICATION THROUGH BROAD-BASED INFORMATION SHARING

As part of the Company's own commitments to consultation and engagement, Esso regularly conducts broad-based information sharing designed to reach both relevant persons identified for any EP and a broad range of other interested parties. This broad-based information sharing allows Esso to create awareness of its activities and encourages potentially relevant persons to make themselves known to the Company (NOPSEMA, 2023). Any persons or organisations who self-identify are added to the list generated by the ongoing review of the relevant persons database (per Section 4.2.4.1).

SPECIFIC IDENTIFICATION PROCESSES FOR CERTAIN GROUPS

FIRST NATIONS PEOPLES

Esso's consultation approach is consistent with Regulation 25, incorporating guidance provided by the Appeal ruling (*Santos NA Barossa Pty Ltd v Tipakalippa*, 2022). The consultation methodology includes sufficient time for each stage of the consultation process, including identification of First Nations groups as well individuals within the community, information sharing, receipt of feedback and assessment of merit.

Identification commences with a review of the relevant person database (as described in Section 4.2.4.1). Additional potentially relevant First Nations peoples are identified using the AIATSIS map of indigenous Australia, overlaid with the geographical information of the OA, ATBA and EMBA, followed by an assessment of whether there will be any impacts from Esso's planned activities affecting the functions, interests or activities. Government resources such as State Government spatial data sets are also utilised to identify potentially relevant Aboriginal Land Councils, Registered Aboriginal Parties and Registered Aboriginal Community Organisations.

The Commonwealth Heritage List (DCCEEW, 2023g) is a list of Indigenous, historic and natural heritage places owned or controlled by the Australian Government which have a significant heritage value to the nation have been reviewed as described in Appendix A.

The Nanjit to Mallacoota Sea Country IPA consultation project, which extends from Corner Inlet to the Victoria/New South Wales border has also been reviewed as described in Appendix A.

Esso reviewed the *Gunaikurnai Whole-of-Country Plan* (GLaWAC, 2015) and the *Position Statement: Offshore Renewable Energy Infrastructure Area* (GLaWAC, 2022) with particular regard to Sea Country mapping.

Currently, there is no Sea Country mapping in Esso's ATBA available. Esso will continue consulting with GLaWAC as a Level 1 relevant person to allow opportunity to discuss Sea Country in the development of future EPs.

LOCAL COUNCILS

Identification commences with a review of the stakeholder database (as described in Section 4.2.4.1). Additional potentially relevant local government/councils are identified using government resources such as State Government spatial data overlaid with the geographical information of the OA, ATBA and EMBA.

COMMERCIAL FISHING

Esso has a long-standing relationship with Bass Strait commercial fishing operators' representative bodies and their members. Esso meets with South East Trawl Fishing Industry Association (SETFIA), Lakes Entrance Fishermen Limited (LEFL) and Seafood Industry Victoria (SIV) on a quarterly basis to discuss all upcoming and current offshore activities including any potential risks and how/if an activity may impact their members.

Where it is identified that an activity may affect their members, various strategies can be implemented including:

- distribution of SMS updates to the eastern fishing fleet advising of vessel movements, activities being performed outside the PSZ, coordinates of survey work, etc. Messages may be sent as often as daily during an activity, if appropriate
- updating Esso vessels plotters to show where commercial fishing equipment is to avoid that area
- commercial fishers may choose to relocate their equipment for the duration of the activity.

Esso also attends representative board meetings and any members meetings to consult directly with members on any proposed activities as requested.

While fishing is prohibited in any PSZ, reminders about PSZs are provided to all local fishing groups annually.

4.2.4.3 Methodology for identification of Regulation 25 (1)(e) relevant persons

Where Esso chooses to consult with persons that would not be considered a relevant person in accordance with Regulation 11A (1)(a)-(d), the provisions of Regulation 25 (1)(e) allow for Esso to nominate these persons/organisations, at their discretion.

4.2.4.4 Persons or organisations who self identify

As part of the Company's own commitments to consultation and engagement, Esso regularly conducts broad-based information sharing designed to reach both relevant persons identified for any EP and a broad range of other interested parties. This broad-based information sharing allows Esso to create awareness of its activities and encourages potentially relevant persons to make themselves known to the Company (NOPSEMA, 2023). Any persons or organisations who self-identify are added to the list generated by the ongoing review of the Stakeholder Database (as described in Section 4.2.4.1).

Esso will undertake advertising and publish information on a proposed activity to help identify any other relevant persons that may not have been identified by the process.

Esso will place advertisements in newspapers informing people of community drop-in sessions and directing them to the Esso Consultation Hub to seek out anyone else who may be relevant based on the defined geographical area of the activity.

Where a person, organisation, department or agency identifies themselves to Esso via these campaigns, Esso will apply the methodology as defined in Figure 4-1 to assess if the person, organisation, department or agency is a relevant person, for the purposes of the EP and assign the relevant consultation Level.

The advertisements will also act as a means for sharing information to identified relevant persons and providing an ongoing mechanism for feedback.

4.2.4.5 Persons or organisations Esso chooses to contact

Over the past 50 years of operations in Bass Strait, Esso has established relationships with relevant persons identified in the *Bass Strait Operations EP* (AUGO-EV-EMM-002) and activity-specific EP submissions, as well as the broader public and other interested parties.

Esso recognises and respects the important contribution of stakeholders and is committed to maintaining and developing further these important relationships.

In addition to consulting with relevant persons under Regulation 25 (1), there may be persons or organisations that Esso chooses to contact in relation to a proposed activity. For example, these are persons or organisations:

- that are 'not relevant' pursuant to Regulation 25 (1), but that Esso has chosen to contact potentially for additional guidance, for example to update contact information or obtain the correct contacts
- that are 'not relevant' pursuant to Regulation 25 (1), but that Esso have contacted as a result of consultation requirements changing or updated guidance from the Regulator
- where it is unclear what their functions, interests and activities are, or whether they may be affected. In this circumstance, engagement is required to inform relevance under Esso's consultation methodology
- Esso wishes to maintain and continue to develop a relationship with.

4.2.5 Step 3 – Assign

Once each relevant person has been identified and classified as per Regulation 25 (1)(a)-(e), the consultation Level is assigned during workshop(s) held with Esso consultation advisors and relevant subject matter experts. The more complex the activity, the more discussions are needed to ensure all matters are considered appropriately.

In assigning a consultation Level, the following considerations are taken into account:

- the location of the activity (OA, ATBA or PEA) and whether or not their functions, interests and activities are impacted by the planned or unplanned activity
- if any impact, the degree of that impact, for example – level of PEA overlap with a known fishery
- the functions, interests and activities of the person(s) or organisation
- persons or organisations known to Esso and previously recorded in the Stakeholder Database

- relevant persons/organisation's known preferred methods of communication and any specific information needs
- Esso's relationship with the relevant person/organisation e.g. when did Esso last engage with them? On what topic? What is their level of interest? Is Esso currently consulting with them on other activities?
- the environmental values and sensitivities and whether or not the persons functions, interests and activities are impacted by the activity; if any impact, the degree of that impact
- if the relevant person/organisation can provide any information that will assist the design or management of the planned activities
- the duration of the activity.

The output of the workshop is recorded in a register of all relevant persons related to the activity including the justifications and reasons for the assigned consultation Level, this information is then provided in the relevant EP.

Esso notes that throughout the consultation process the assigned Level of consultation may be adjusted based on feedback received from the relevant persons, for example a relevant person may request more or less information and may therefore move to a higher or lower Level of consultation.

4.2.6 Step 4 – Verify

For Regulation 25 (1)(a)-(c) relevant persons, the verification process confirms the details of the department/agency are correct. This involves checking for departmental restructures, name changes, staff/contact person changes, contact information changes etc.

For Regulation 25 (1)(d)-(e) relevant persons, verification aims to ensure that:

- the functions, interests and activities used to evaluate and categorise the person or organisation as a relevant person are confirmed
- identified representatives are a true representation/advocate of the views of their constituents and can be relied upon to faithfully communicate the results of engagements back to their constituents
- relevant persons have been provided with the Esso Consultation Questionnaire to confirm they are willing to participate in the consultation process.

Verification processes for Regulation 25 (1)(d)-(e) relevant persons are further detailed in the following sections.

4.2.6.1 Verifying functions, interests and activities

In order to verify functions, interests and activities, Regulation 25 (1)(d)-(e) relevant persons (or their verified representative) will be provided with:

- an information bulletin (or similar) providing sufficient information on the activity proposed in the EP
- Esso Consultation Questionnaire to verify functions, interests and activities.

The information bulletin aims to ensure all relevant persons are provided with sufficient information at the outset of the consultation process so they can make informed decisions about their participation or otherwise. This information bulletin will be in the form of a brochure or link to a specific webpage.

One aim of the Esso Consultation Questionnaire is to verify the functions, interests and activities of each relevant person. This is achieved through providing a tailored list of functions, interests and activities (relevant to the EP) so that the relevant person can select one or more items. Esso updates the relevant persons database and may re-evaluate the person's/group's status as a relevant person.

In some cases, relevant persons have developed guidance detailing their own functions, interests or activities and how and when they wish to be consulted on activities (NOPSEMA, 2023), which will be considered throughout the process. This includes, for example:

- *Consultation with Commonwealth agencies with responsibilities in the marine area* (NOPSEMA, 2022)
- *Engage Early: Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* (Department of Environment, 2016).

If the functions, interests or activities of a person/s have not been advised directly to Esso via the above methods, an assessment is made based on available information relating to the person/s or organisation/s, as per NOPSEMA function, interests and activities definitions.

4.2.6.2 Verifying true representation

The Esso Consultation Questionnaire is also used to determine the group participation of individual relevant persons. This information is used to develop a list of group members that Esso can engage with directly to seek verification that the right group representatives have been identified. This ground-truthing of views of the designated representatives is essential to confirm they will provide a comprehensive and accurate representation. The Questionnaire also allows for individual relevant persons to choose whether they want to be consulted with directly or if their preference is for Esso to consult with the group representative on their behalf.

4.2.6.3 Confirming participation

Provision is made in the Questionnaire to allow for a relevant person to 'opt out' of the consultation process. Esso will respect the wishes of the relevant person should they choose to 'opt out'.

Where the Esso Consultation Questionnaire has not been completed and returned, this will not be considered 'opting out' and Esso representatives will seek to make further contact with the relevant person to obtain a response, as appropriate.

Relevant persons can also notify Esso via the Consultation email to opt in or out of communications on specific activities.

It is recognised that in any community consultation there will inevitably be persons who cannot participate for various reasons, however the absence of their participation would not invalidate the process provided reasonable efforts are made to identify the relevant persons and to consult with them (NOPSEMA, 2023).

4.2.7 Step 5 – Consult

Esso seeks to consult with relevant persons so that each relevant person has sufficient information to understand the activity and to help them make an informed assessment of possible consequences associated with the EP activities pursuant to their own functions, interests or activities. Esso acknowledges that what constitutes sufficient information as part of a consultation process may differ depending on the relevant person/s (NOPSEMA, 2023). As such, Esso seeks to consult in a way that is appropriate for each relevant person and adapted to the nature of the relevant persons to be consulted.

To achieve this, Esso consults with relevant persons in accordance with their assigned consultation Level. The consultation methods for each Level are outlined in Sections 4.2.7.1 to 4.2.7.3.

Each consultation has the overarching goals of:

- further strengthening foundation relationships with existing relevant persons
- developing relationships with new relevant persons
- facilitating genuine two-way dialogue between Esso and relevant persons
- building upon preceding consultations (where applicable) to further a relevant person's understanding of the activity.

Throughout the consultation process, relevant persons are invited to correspond with Esso if they have concerns or require clarifications. Follow-up verbal discussions occur where required or if requested.

Esso also provides avenues for relevant persons to contact Esso outside of formal engagement activities if they have any questions or concerns. If needed, Esso will provide support or assistance to relevant persons in relation to understanding the technical data.

All relevant persons are given the opportunity to nominate how they would like to be consulted. As appropriate, direct engagement with relevant persons e.g. First Nations groups, will include co-design of their consultation methodology. This may require consultation over an extended period of time.

Relevant persons are not obligated to respond to a titleholder's requests to participate in the consultation process. In cases where no response has been received from a relevant person, and where sufficient information and reasonable period has been afforded to the relevant person, Esso will consider consultation closed for the purposes of the preparation of the EP.

The assigned consultation Levels and associated rationale for each relevant person are included in the relevant EP.

4.2.7.1 Consultation Level 1

Relevant persons assigned with consultation Level 1 will be provided with targeted and tailored activity-specific information to enable an effective consultation process. This can include meetings, presentations, workshops, forums, phone calls and specific information such as mapping. Consultation Level 1 is the highest level of engagement with relevant persons and may require consultation over an extended period of time.

Consultation Level 1 is generally applied to relevant persons whose functions, interests or activities are located in the OA of the planned activity or if the relevant person has indicated that this is the level of consultation they prefer.

Relevant persons will be provided with sufficient information (in a variety of formats, i.e. written, face to face, telephone etc.) and a reasonable period (generally 30 days, but can be more according to the activity complexity) to respond. If no response is received, Esso will make a second attempt to contact the relevant person.

4.2.7.2 Consultation Level 2

Relevant persons assigned with consultation Level 2 will be provided with specific information based on known information needs (e.g. published industry guidance notes or proformas outlining what information a relevant person wishes to receive).

This may include meetings, presentations, workshops, forums, phone calls and specific information such as mapping. May require consultation over an extended period of time.

Consultation Level 2 is generally applied to relevant persons whose functions, interests or activities are located in the ATBA of the planned activity or if the relevant person has indicated that this is the level of consultation they prefer.

Relevant persons will be provided with sufficient information (in a variety of formats, i.e. written, face to face, telephone etc.) and a reasonable period (generally 30 days, but can be more according to the activity complexity) to respond. If no response is received, Esso will make a second attempt to contact the relevant person.

4.2.7.3 Consultation Level 3

Relevant persons assigned with consultation Level 3 will be provided with activity-specific information but at a broader, level. This can include: activity-specific information bulletins including the impacts, risks and the mitigative controls in place, information regarding PEA and oil spill modelling, and/or links to the Esso Consultation Hub and Esso Consultation Questionnaire.

If requested, consultation can include face-to-face engagements, phone calls, community meetings, specialist group meetings or community drop-in sessions.

Consultation Level 3 is generally applied to relevant persons whose functions, interests or activities are located in the PEA and may be affected by unplanned activities associated with the planned activity or if the relevant person has indicated that this is the level of consultation they prefer.

Relevant persons will be provided with sufficient information (in a variety of formats, i.e. written, face to face, telephone etc.) and a reasonable period to respond (generally 30 days, but can be more according to the activity complexity). If no response is received, no further consultation will be undertaken but Esso will continue to provide broader, high level information.

4.2.8 Relevant persons responses

Esso makes ongoing efforts to obtain responses through consultation. Esso is committed to considering all input and/or responses received from relevant persons in the development of EPs. Relevant Person responses may be received in various ways.

Esso accepts responses and engages in consultation in order to understand the responses. Esso clearly identifies and addresses each matter raised by relevant persons, and if applicable to the activity to which the EP relates:

- demonstrates that the risk or impact in question has been reduced to ALARP and will be of an acceptable level

- provides a statement that addresses each element of the objection or claim made by a relevant person and where control measures are implemented to resolve objections and claims, will clearly communicate this to the relevant person
- provides copies of all written responses provided by a relevant person to NOPSEMA.

Responses received from relevant persons, throughout the development of an EP and its subsequent revisions, is considered and addressed as appropriate. A summary of responses, objection and/or claim, as well as Esso's assessment of the merits of feedback, objections and/or claim, and Esso's response, are provided in the EP.

4.2.9 Ongoing engagement

Esso recognises the importance of ongoing engagement with stakeholders as it is an opportunity to review and update Esso's current relevant persons functions, interests and activities, and as a forum for enquiry, objections or claims to be raised during an EPs activity.

In the case that a response is received following the submission of the JUR P&A EP, the response will be considered and addressed as appropriate and clearly communicated to the relevant person.

4.2.10 Consultation reporting

Esso maintains a Gippsland-wide relevant persons database. Communications, including meetings, calls, distribution of communications materials, emails etc. with relevant persons are logged in the database, detailing any feedback received, including questions, issues, concerns, suggestions, objections and/or claims, and any actions/responses. Actions are tracked and responses are provided to relevant persons as required.

During all communications, Esso encourages relevant persons to provide feedback through:

- emailing the consultation@exxonmobil.com email address
- accessing the Esso Consultation Hub
- calling +61 3 9261 0000
- or writing to GPO Box 400 Melbourne VIC 3001.

A report on all consultations between the Company and any relevant person is included in the relevant EP.

4.3 Methodology as applied to the scope of this Environment Plan

This section demonstrates how Esso applies its consultation methodology specifically to this EP and how the Company ensured the consultations were appropriate and adapted to the nature of the interests of the relevant persons.

During the course of consultation for this EP there have been no claims or objections received.

4.3.1 Step 1 - Define

For JUR P&A activities, Esso has outlined the following specifications, which were the basis for determining the anticipated key functions, interests and activities of each relevant person's category and defining criteria to determine categorisation as a relevant person within the scope of this EP:

- Activity description: Refer to Section 2
- Scope: Refer to Section 1.1
- Timing: Refer to Section 2.2
- Values and sensitivities: Refer to Section 3.3
- Geographic location: For the purposes of consultation, the geographic location used to determine relevant persons includes the OA, ATBA and EMBA as shown in, Figure 2-1 and Appendix A (Figure 1-1).

The planned activity for this EP is the P&A of 21 platform-based wells and five subsea wells in Commonwealth Waters, to install conductors from the platform at Marlin B and potentially undertake geotechnical survey work around the Bream wells. Therefore, in determining who is a relevant person for consultation, Esso sought to identify and consult with persons whose functions, interests or activities could be affected by the activities described in Section 2 of this EP.

4.3.2 Step 2 - Identify and classify

A complete list of all relevant persons that may be affected from either the planned activities or the unplanned activities, including the assessment of their relevance, their assigned relevant person category, their functions, interests and activities and subsequent consultation Level is provided in Appendix E-1.

4.3.2.1 Regulation 25 (1)(a)-(c) relevant persons

To identify relevant persons in accordance with Regulation 25 (1)(a)-(c), Esso use the methods as outlined in Table 4-2. The full list of Regulation 25 (1)(a)-(c) relevant persons is shown in Appendix E-1.

Table 4-2 Relevant persons identification methods

Method	Description
Relevant persons previously identified for other activities	
Review of Esso’s existing relevant person database	Identify existing relevant persons based on Regulation 25 (1)(a-c) and the: <ul style="list-style-type: none"> • activity description • scope • geographic location.
Actively seek out new relevant persons	
Regulation 25 (1)(a)-(c)	Search for any Commonwealth or State departments, agencies or ministers related to any of the values and sensitivities listed in Section 3.3 and located in either the OA, ATBA or EMBA.

4.3.2.2 Identification of Regulation 25 (1)(d) relevant persons

To identify relevant persons in accordance with Regulation 25 (1)(d), Esso used the methods as outlined in Table 4-3. The full list of Regulation 25 (1)(d) relevant persons is shown in Appendix E-1.

Table 4-3 Regulation 25 (1)(d) Relevant persons identification methods

Method	Description
Relevant persons previously identified for other activities	
Review of Esso’s existing relevant person database	Identify existing relevant persons based on Regulation 25 (1)(d) and: <ul style="list-style-type: none"> • area of planned activities and geographic location of potentially affected areas from unplanned activities. • reasonably ascertainable functions, interests or activities • provide information bulletins, Consultation Hub and Esso Consultation Questionnaire.
Actively seek out new relevant persons	
Local knowledge	Use local knowledge of existing relationships to identify marine users and interest groups active in the area.
Existing relevant persons	Ask existing relevant persons to share information bulletins, Esso Consultation Hub and Esso Consultation Questionnaire with anyone they consider may be interested.

Method	Description
Seek advice of First Nations Groups	<p>Met with Koori Heritage Trust to discuss cultural heritage and sea country.</p> <p>Consultation Hub including information bulletin and Esso Consultation Questionnaire provided to all First Nations identified in the EMBA.</p> <p>Potentially relevant First Nations peoples are identified using the AIATSIS map of indigenous Australia, overlaid with the geographical information of the OA (and EMBA if applicable).</p> <p>Government resources such as State Government spatial data sets are also utilised to identify potentially relevant Aboriginal Land Councils, Registered Aboriginal Parties and Registered Aboriginal Community Organisations.</p> <p>Continued engagement with Gunaikurnai Land and Waters Aboriginal Corporation.</p>
Community sessions	Consider the attendees of community sessions.
Recommendations	Consider recommendations received from relevant persons via responses provided in the Esso Consultation Questionnaire or through consultation with them.
Searches of internet sources	<p>Google, social media platforms using the geographical boundaries of the EMBA.</p> <p>Search for any potentially relevant persons related to any of the values and sensitivities listed Section 3.3.</p> <p>Search using methodology in Section 4.2.4.1.</p>
Advertisements in newspapers and other relevant news sources	Advertised in national, state, regional and local papers using the geographical boundaries of the EMBA including <i>Koori Mail</i> .
Review of legislation applicable to petroleum and marine activities	Following on from (Santos NA Barossa Pty Ltd v Tipakalippa, 2022 Esso conducted a further review of worker unions, eNGOs, First Nations groups and communities within the geographic boundary of the EMBA.
Self-identification	
Broad-based information sharing	Relevant persons self-identify in response to Esso's broad-based information sharing mechanisms, such as the Esso website, <i>Connection</i> magazine, advertisements etc.
Other means	Relevant persons self-identify.

4.3.2.3 Identification of Regulation 25 (1)(e) relevant persons

To identify relevant persons in accordance with Regulation 25 (1)(e), Esso has reviewed the existing Stakeholder Database to see if there are any other persons or organisations that Esso believes are relevant. These persons were added to the list of relevant persons and assigned an appropriate consultation Level. The full list of Regulation 25 (1)(e) relevant persons is shown in Appendix E-1.

4.3.2.4 Persons or organisations Esso chooses to contact

As part of Esso's ongoing stakeholder relationship management activities, Esso may choose to contact other persons and organisations that did not meet the Regulation 25 (1) categories. If so, each will be assessed and added to Appendix E-1, under the category of 'other'. For the purposes of consultation, they may not be relevant persons.

The persons and organisations in this category may include those who:

- do not have a function, interest or activity that overlapped with either the OA, ATBA or the EMBA and were not going to be impacted by the activities outlined in this EP
- have an interest in Esso's other activities (e.g. onshore facilities in Longford or Hastings) and were notified as part of our ongoing communications with them
- have a broader industry interest and are included in our broader communications
- Esso approached to clarify what their functions, interests and activities are, or whether they may be affected.

4.3.3 Step 3 - Assign

In order to confirm the appropriate Regulation 25 (1) category and assign the appropriate consultation Level to each identified relevant person, a number of consultation workshops were held with Esso consultation advisors and relevant subject matter experts.

Factors considered in the workshops, specific to the JUR P&A activity, include:

- the various locations of the OA's
- the OAs are within the 500-metre PSZ
- the well sites are located within existing Commonwealth fisheries that may be used by commercial fishers
- the 500-metre PSZ will be communicated to the commercial fishing organisations
- there may be recreational fishing in the area but unlikely to be significant given the closeness of the Traffic Separation Scheme
- the duration of the work, estimated to be 30 days per well, timing at each location will differ depending on the work scope
- there is no known Sea Country mapping currently available
- relevant government departments are known
- the functions, interests and activities of the relevant person(s) or organisations identified and their known preferred methods of communication
- Esso's relationship with the relevant person or organisation e.g. when did Esso last engage with them? On what topic? What are their levels of interest? Is Esso currently consulting with them on other activities?
- the environmental values and sensitivities have been assessed in the impact and risk assessment as risk category 3 or 4 per Section 5 and 6 of this EP
- if the relevant person/organisation can provide input to the design of the or management of the planned activities have been identified.

A complete list of all identified relevant persons, their assigned consultation Level and the justification for the consultation Level, as per the process outlined in Section 4.2.5) is provided in Appendix E-2.

4.3.4 Step 4 - Verify

A link to the Esso Consultation Questionnaire was emailed to every person in the stakeholder database to verify:

- which Esso activities they wish to be consulted on
- how they would prefer Esso to communicate with them
- which functions, interests or activities that may apply to them
- any group(s) they are represented by, a member of, or participate in
- if they wish to be consulted through their representative.

Esso confirmed representation for the groups outlined in Table 4-4.

Table 4-4 Relevant person representatives

Relevant person	Representative for
SETFIA ²¹⁴	Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
SIV ²⁰⁹	Representative peak body for the Victorian seafood industry, from professional fishers, through to wholesalers, processors, and retailers.
LEFL ¹⁰³ (formerly Lakes Entrance Fishing Cooperative)	Represents Lakes Entrance commercial fishing by providing a full-service unloading facility to the local fishing fleet. From here, fresh seafood is distributed to local shops.

4.3.5 Step 5 - Consult

JUR P&A consultations began in January 2023 using various methods and continued until submission of this EP in May 2024.

4.3.5.1 Consultation timing

For the nature and scale of the activity described in this EP, Esso determined the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person.

All relevant persons were consulted for a minimum of 30 days and some up to 10 months. Esso has met the requirement to provide a reasonable period for consultation.

4.3.5.2 Provision of sufficient materials

Esso developed an information bulletin to provide each relevant person with sufficient information, in accordance with Regulation 25 (2), by providing an overview of the proposed activity including information on the activity description, scope, timing, location, risks, impacts, mitigation measures and EMBA information and EMBA map.

- **June 2023:** First version of an information bulletin (Information Bulletin #1) was emailed to stakeholders (refer to Appendix F-1).
- **July 2023:** Another email was sent to stakeholders advising them of the Consultation Hub containing links to Information Bulletin #1 (refer to Appendix F-1)
- **September 2023:** Consultation process continued with the distribution of Information Bulletin #2 (a revision of Information Bulletin #1), which included additional information and a map on the potential for a LOWC that may potentially impact the environment, including people and communities, the heritage value of places and their social and cultural features (refer to Appendix F-2).
- **October 2023:** Email was sent sharing the Consultation Hub again and providing a reminder of consultation on all proposed activities including the JUR P&A EP.
- **March 2024:** Two emails were sent, one to EMBA specific stakeholders and one to the broader list of stakeholders sharing the Consultation Hub again and providing a reminder of consultation on all proposed activities including the JUR P&A EP.
- **July 2024:** Esso sent Information Bulletin #3 (a revision of Information Bulletin #2) to all stakeholders which included updated text regarding flaring and to remind stakeholders that consultation is open (refer to Appendix F-3).

Esso acknowledges that what is considered 'sufficient information' may vary from relevant person to relevant person. As such, the information bulletin was accompanied with the Esso Consultation Questionnaire, which provides relevant persons with a mechanism to communicate what they consider 'sufficient information'.

Over the course of the consultation period for this activity Esso also provided three community sessions in the local area:

- **Session 1:** 18 April 2023, 5.30pm-6.30pm at 201 Esplanade, Lakes Entrance, VIC, 3909
- **Session 2:** 29 August 2023, 5.30pm-6.30pm at 201 Esplanade, Lakes Entrance, VIC, 3909
- **Session 3:** 30 August 2023, 5.30pm-6.30pm at 90 Macalister Street, Sale, VIC, 3850.

To ensure every effort was made to reach as many relevant persons as possible, the community sessions were advertised in various news outlets from 11 to 14 April 2023 and 16 to 23 August 2023 as shown in Table 4-5.

A copy of the April 2023 advertisement is shown in Figure 4-2. The August 2023 advertisement is shown in Figure 4-3.



Community Consultation Session

Esso actively engages with relevant people across the Gippsland region and consults them as we work through our offshore activities. This ongoing communication has played an essential role in how we align our approach and ensures the community's needs and expectations around this work are understood.

If you would like to learn more about our upcoming offshore activities including Decommissioning, Carbon Capture and Storage, Jack Up Rig activities and the Bass Strait State Waters Environment Plan, we invite you to come along to our community information session.

Drop-in to the Bellevue on the Lakes (201 Esplanade, Lakes Entrance) at any time between 5.30pm and 6.30pm on Tuesday 18 April 2023. Please register your interest in attending at consultation@exxonmobil.com by Friday 14 April 2023.

If you cannot attend this session, you can always contact us at consultation@exxonmobil.com.



An ExxonMobil Brand

Figure 4-2 Advertisement published in various news outlets from 11 to 14 April 2023



Esso's Bass Strait activities

Progress update

An ExxonMobil Brand

Esso actively engages with relevant people across the Gippsland region and consults them as we work through our offshore activities.

This ongoing communication has played an essential role in how we align our approach and ensure the work that we are undertaking meets the community's needs and expectations.

Community Sessions

If you would like to learn more about our offshore activities including Decommissioning, Carbon Capture and Storage and Jack Up Rig Drilling Kipper Environment Plan we invite you to one of our community information sessions.

When: Tuesday 29 August 2023
Where: Bellevue on the Lakes Hotel, Lakes Entrance
Time: Any time between 5.30 pm - 6.30 pm

When: Wednesday 30 August 2023
Where: Drawing Room at the Criterion Hotel, Sale
Time: Any time between 5.30 pm - 6.30 pm

Please register your interest in attending by emailing consultation@exxonmobil.com by Friday 25 August 2023.

Scan the QR code for more information on our offshore activities on our Consultation Hub.



<https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub>

Pipelines Decommissioning Stakeholder Forum

Would you like to be more involved in the discussion about options and criteria being considered for decommissioning the pipeline network?

Please contact us by phone or email to register your interest in attending one of the following half-day stakeholder forums:

When: Tuesday 26 September 2023
Where: Sale

When: Tuesday 3 October 2023
Where: Melbourne

When: Wednesday 4 October 2023
Where: Online

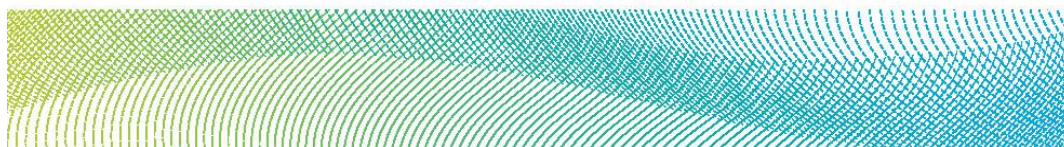


Figure 4-3 Advertisement published in various news outlets from 16 to 23 August 2023

In addition to the above activities, in April 2024, Esso staffed a booth and engaged with a wide variety of people at the Air Show in West Sale, and provided a Gippsland Basin Activities information bulletin including JUR P&A EP and links to the Esso Consultation Hub (to interested persons).

Table 4-5 Community session advertisement

News outlet	Advertisement feature date	Advertisement reference
The Gippsland Times	11 April 2023	Appendix G-1
La Trobe Valley Express	12 April 2023	Appendix G-1
South Gippsland Sentinel Times	12 April 2023	Appendix G-1
Bairnsdale Advertiser	13 April 2023	Appendix G-1
Lakes Post	13 April 2023	Appendix G-1
Herald Sun	14 April 2023	Appendix G-1
The Australian	14 April 2023	Appendix G-1
South Gippsland Sentinel Times	15 August 2023	Appendix G-2
Bairnsdale Advertiser	16 August 2023	Appendix G-2
La Trobe Valley Express	16 August 2023	Appendix G-2
Lakes Post	16 August 2023	Appendix G-2
Herald Sun	18 August 2023	Appendix G-2
The Australian	18 August 2023	Appendix G-2
Gippsland Times	22 August 2023	Appendix G-2
Koori Mail	23 August 2023	Appendix G-2

A total of eight people attended the community sessions with no attendees interested in the JUR P&A activities. The Esso Consultation Questionnaire QR Code was available at the sessions.

Esso also conducts regular meetings with organisations and/or agency representatives of Regulation 25 (1)(a)-(c) relevant persons and with groups and/or group representatives identified under Regulation 25 (1)(d). Details of these meetings are recorded in the relevant persons database and presented in the Consultation report (refer to Appendix E-3).

No objections or claims were received from relevant persons, either through face-to-face, email or phone requests, or through responses provided in the Esso Consultation Questionnaire for JUR P&A EP. All communications are recorded in the relevant persons database and presented in the Consultation report (refer to Appendix E-3).

4.3.5.3 Consultation with First Nations people

Esso commenced JUR P&A activity-specific consultation with GLaWAC⁹² in June 2023, providing an activity overview (description, location, impacts and risks) and seeking feedback. Engagement with GLaWAC continued through June 2023 to October 2023 via email and phone, and included discussions on Esso's offshore activities and sharing of information related to decommissioning. Additional information on JUR Spill Modelling Information (EMBA) was provided to GLaWAC in October 2023.

The Esso Consultation Hub and Esso Consultation Questionnaire, which provides activity-specific information to the public, was launched and communicated to GLaWAC in July 2023. GLaWAC provided a response to the Esso

Consultation Questionnaire nominating to be consulted on specific activities including the South East Australia Carbon Capture and Storage (SEA CCS) Project and decommissioning activities (not including the scope of this EP).

Specific Key Messages material was produced and provided by Esso as requested by GLaWAC for use during consultation in February 2024 (including reference to well plug and abandonment).

Esso followed up on the JUR P&A activity-specific consultation with GLaWAC in February and March 2024, providing an activity overview (description, location, impacts and risks) and seeking feedback. In May 2024, Esso held a meeting at GLaWAC offices to discuss the JUR P&A activity, as well as other current proposed and existing operational activities. Refer to Appendix F-4 for the consultation pack presented during this meeting.

Engagement with GLaWAC is an on-going exercise via monthly consultation meetings, emails and phone calls, and includes discussions on Esso's offshore activities and sharing of information related to:

- production activities (including P&A'ing of wells, and waste water treatment)
- decommissioning,
- carbon capture and storage.

GLaWAC were provided an opportunity to nominate to be consulted on JUR P&A activities via email, but did not make this nomination. The JUR P&A consultation closing date was communicated publicly in November 2023.

In relation to Traditional Custodian relevant persons, Esso has discharged its duty under regulation 25. Esso considers that consultation under Regulation 25 is complete. This is on the basis that GLaWAC was consulted on JUR P&A activity during monthly consultation meetings and via email and during these discussions confirmed that the information provided for the P&A process was sufficient.

General engagements (beyond the JUR P&A activity) with GLaWAC continued throughout 2023 and are ongoing:

- Esso's discussions (via phone, email and in person) with GLaWAC have included Sea Country mapping, with an offer from Esso to share geospatial and other information which may assist GLaWAC in mapping sea country for their Indigenous Protected Area (IPA) application.
- Esso requested information on Gunaikurnai Sea Country to further understand how offshore activities might impact on cultural heritage (January 2023). A meeting was conducted in GLaWAC offices in December 2023 and followed up with a workshop at Esso's Sale office (April 2024) to further discuss GLaWAC's IPA application, and to share information that might support this application.
- Esso representatives attended the NOPSEMA facilitated National Summit on Consultation on Offshore Petroleum Activities with First Nations Peoples (Perth, 21-22 June 2023).
- the Australian Energy Producers facilitated National Sea Country Alliance Summit (NSCAS) (Perth, 6-7 November 2023), which were also attended by GLaWAC representatives.

Esso considers these activities as valuable relationship building, as well as facilitating information sharing.

4.3.5.4 Offshore Wind Industry

Feasibility licences for the offshore wind industry have recently been granted to companies in the Gippsland region. Esso began consultation in July 2024 to establish if these companies' functions, interests or activities have the potential to be affected by the JUR P&A activities and may be relevant persons.

In relation to offshore wind industry relevant persons, Esso has discharged its duty under Regulation 25. Esso considers that consultation under Regulation 25 is complete. This is on the basis that wind industry participants were consulted on JUR P&A activity via email and meetings. During the course of this consultation, no issues or claims were raised by any offshore wind industry stakeholders, and Esso committed to continue to share details of offshore activities including timing and locations with the wind industry participants.

4.3.6 Broad-based information sharing

As part of Esso's commitment to engaging with relevant persons to build lasting long-term relationships, a range of broad-based information sharing mechanisms are used. Identified relevant persons can also choose to 'opt in' to distribution lists through the Esso Consultation Questionnaire.

Esso's broad-based information sharing mechanisms are outlined in Table 4-6.

Table 4-6 Broad-based information sharing mechanisms

Mechanism	Description
Periodic updates	Esso uses email distribution to provide updates about Esso's offshore operations and activities, reports or information bulletins to relevant persons as appropriate.
Esso Consultation Hub	A Consultation Hub has been developed and shared with all relevant persons to provide access to information on all offshore activities and the opportunity to request further information and consultation preferences.
Esso Consultation Questionnaire	A Consultation Questionnaire has been developed and shared with all relevant persons to allow Esso to consult with relevant persons based on their preferences: <ul style="list-style-type: none"> • Which of the following Esso activities would you like to be consulted on? • How would you prefer Esso communicates with you? • Please select any functions, interests or activities that may apply to you • Please select any group(s) you are represented by a member of, or participate in • Do you wish to be consulted through your representative? • How did you hear about our activities?
Connection magazine	Esso's monthly newsletter, which is distributed via email and accessible on the Company website. The magazine provides relevant persons with regular updates on Esso's activities.
Esso website	Esso's website is an online portal that gives broader groups of relevant persons up-to-date information on various facets of our business and provides an opportunity for relevant persons to make enquiries about our offshore activities and projects. The website is updated periodically to reflect new information and activity progress.
Annual Decommissioning Report	Accessible from Esso's website, this Report provides technical, yet accessible, insight into Esso's decommissioning plans and yearly progress. The Report is emailed directly to all Relevant Persons and shared more broadly with other interested relevant persons.

4.4 Relevant persons feedback

Throughout the consultation process, all relevant persons had the opportunity to contact Esso's consultation and engagement team by emailing consultation@exxonmobil.com, completing the Esso Consultation Questionnaire, calling Esso's Head Office on +61 3 9261 0000 or writing to GPO Box 400 Melbourne VIC 3001.

Esso provides a summary of all responses, objections and/or claims, as well as Esso's assessment of the merits of these and Esso's response in Appendix E-3.

No objections or claims were received from relevant persons, either through face-to-face, email or phone requests, or through responses provided in the Esso Consultation Questionnaire for the scope of this EP.

During the April 2023 community drop-in session, Esso did not receive any feedback from attendees.

Esso considers it has discharged its obligations for consultation under Regulation 25 (1) having provided a reasonable period, sufficient information and opportunity for relevant persons to provide feedback, objections and/or claims.

4.5 Ongoing consultation

Following the submission of this EP, Esso will continue communicating with relevant persons to provide activity updates. Updates will include activities within the scope of this EP as well as broader Esso operations. Table 4-7 outlines the ongoing consultation plans for this EP.

In the case that a response is received following the submission of the JUR P&A EP, the response will be considered and addressed as appropriate and clearly communicated to the relevant person.

Table 4-7 Ongoing consultation plan

Relevant person(s)	Planned ongoing consultation mechanism	Timing
All	Information-sharing materials regarding the outcome of this submission. Continuing to respond to specific feedback received via email, phone or meetings. Ensuring the Esso website is maintained and kept up to date. Continuing to develop and distribute regular newsletters and issues of Connection magazine.	As required
Regulation 25 (1)(a)-(c)	Conducting regularly scheduled meetings with Commonwealth and State government departments and agencies.	As scheduled
Commercial Fishing Representatives	Meetings to provide updates on all activities	Quarterly
Relevant Persons identified as marine users and relevant government departments and agencies	Notifications of commencement of activities as appropriate.	2 weeks prior to activity commencing
	Notifications of vessel activities via text message or email where appropriate.	During activity
NOPSEMA	Regulatory notification of start of activity.	10 days prior to activity commencing
	Regulatory notification of cessation of activity.	Within 10 days of activity completion
Newly Identified Relevant Persons	Periodic review of Relevant Persons using the methods outlined in Step 2 of Esso's methodology (refer to Section 4.2.4) to ensure new relevant persons are identified and consulted. If a new Relevant Person is identified, consultation will commence by providing an information bulletin containing details of the activity, including information on the potential environmental impacts and risks associated with the activities.	6 monthly

4.6 Reporting

In accordance with OPGGS (Environment) Regulations, Regulation 24, Esso has included within this EP submission, reports on all consultations under Regulation 25 undertaken with any relevant person identified in this EP.

A summary report on all JUR P&A-specific consultations undertaken up to the date of submission of this EP is included as Appendix E-3. The summary report is intended to be made public with this EP and does not contain any sensitive information.

Sensitive information relating to relevant persons and the full text of any response by a relevant person to consultation under Regulation 25 in the course of preparation of the EP, also referred to as the 'sensitive information part', is also provided to NOPSEMA as Attachment 1. However, in accordance with Regulation 28 (1), the 'sensitive information part' is removed prior to publication.

5 Environmental impact and risk assessment methodology

5.1 Overview

Environmental impact assessment is concerned with activities that are reasonably certain to occur (such as planned discharges to the air or water), while environmental risk assessment is concerned with unplanned events that may possibly occur (such as hydrocarbon spills, introductions of marine pests, loss of waste overboard).

Environmental impacts result from the proposed activity and will result in a change to the environment or a component of the environment, whether adverse or beneficial.

Environmental risks resulting from unplanned activities are those where a change to the environment or component of the environment may occur (i.e. there may be impacts if the event actually occurs). Risk is a combination of the impact or consequence of an event and the associated likelihood (probability) of the event occurring. For example, a hydrocarbon spill may occur if a support vessel's fuel tank is punctured by a collision during the activity. The risk of this event is determined by assessing the consequence or environmental impact (using factors such as the type and volume of fuel and the nature of the receiving environment) and the likelihood of this event happening (which may be determined qualitatively or quantitatively).

Impacts and risks associated with the proposed activity were identified in an environmental risk workshop held in the Esso offices in April 2023 with the required subject matter experts and in accordance with ExxonMobil's *Environmental Aspects Guide* (ExxonMobil, 2012). This ExxonMobil Guide is consistent with the approach outlined in *ISO 14001 Environmental Management Systems*, *ISO 31000:2009 Risk Management* and *HB203:2012 Environmental Risk Management – Principles and Process*.

From the risk workshop, a risk register is produced which details the outcomes from the risk assessments against each of the environmental and socio-economic dimensions outlined in section 5.4.

5.2 Definitions

Table 5-1 describes terms relevant to the impacts and risk assessments completed.

Table 5-1 Definitions

Term	Definition
Activity	An activity refers to a component or task within a project 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
Impact (HB203:2012)	Any change to the environment or a component of the environment, whether adverse or beneficial, wholly, or partly resulting from an organisation's environmental aspects.
Risk (HB203:2012)	The effect of uncertainty on objectives. The level of risk can be expressed in terms of a combination of the consequences and the likelihoods of those consequences occurring.
Receptor	The term receptor refers to a feature of the natural and human surroundings that can potentially be impacted. This includes air, water, land, flora, and fauna including people.
Consequence	The consequence of an impact is the outcome of the event on affected receptors. Consequence can be positive or negative.
Likelihood	The likelihood of an impact is the chance (probability) of the impact occurring.

5.3 Identification and characterisation of environmental aspects

In order to undertake meaningful impact and risk assessment, a clear understanding of the context of the assessment is required, by defining the activity and the receiving environment, and understanding any requirements (legislative or other) which are relevant to either the activity or the environment.

All components of the activity have been identified and described in Section 2. After describing the activity, an assessment was carried out during the environmental risk workshop to identify environmental receptors and potential interactions between the activity and the receiving environment. The existing environment in the region is described in Section 3. The interactions, or environmental aspects associated with this activity have been identified as shown in Table 5-2.

Based upon an understanding of the environmental aspects, impacts and risks were defined and ecological and social receptors identified enabling a systematic evaluation to be undertaken. Feedback received during relevant person consultation (as detailed in Section 4) has been incorporated into the aspects, receptors, impacts and risks identification and evaluation.

Table 5-2 Activity and aspect matrix

Activity	Physical presence – Seabed disturbance	Physical interaction – Other	Sound emissions	Emissions to air	Light emissions	Planned discharge – Treated bilge and deck drainage	Planned discharge – Sewage and food waste	Planned discharge – Cement	Planned operation discharge – Subsea	Planned operation discharge – Surface	Physical interaction – Marine fauna	Physical interaction – Introduction of IMS	Accidental release – Dropped objects	Accidental release – Waste	Accidental release – LOC: Hazardous/non-hazardous substances	Accidental Release – LOC: Refined oils (collision)	Accidental Release – LOC: Reservoir hydrocarbons
P&A execution			Yes	C						Yes							Yes
Cement operations								Yes									
Wellhead cutting and removal	Yes		Yes						Yes				Yes				
JUR operations	Yes	Yes	Yes	Yes	Yes	Yes	Yes					Yes	Yes	Yes	Yes		
Vessel operations		Yes	Yes	Yes	Yes	Yes	Yes				Yes	Yes	Yes	Yes	Yes	Yes	
Helicopter operations			Yes														
ROV operations			Yes										Yes		Yes		
Conductor driving	Yes		Yes										Yes		Yes		
Geotechnical survey	Yes		Yes										Yes		Yes		

C = Included as a contingency only.

5.4 Environmental impact assessment

Environmental impacts, or consequences, are evaluated in terms of the degree of the effects and the sensitivity of the environment and the community. Esso evaluates three environmental effects dimensions (scale, duration, and intensity) (Table 5-3 and Table 5-5) and three environmental sensitivity dimensions (irreplaceability, vulnerability, and influence) (Table 5-4 and Table 5-6) (ExxonMobil, 2012).

The determination of impact severity involves evaluating each dimension as lower, moderate, or higher based on qualitative descriptions. Once each dimension is evaluated, results for effect and sensitivity are compared against criteria to define the overall environmental and public impact consequence level (Table 5-7). These determinations are made during the Environmental Impact and Risk assessment workshops.

Table 5-3 Evaluation of environmental effect dimensions

Effect dimension	Value	Description
Duration	Short-term (lower)	Hours to days; effects highly transitory.
	Medium-term (moderate)	Weeks to months. Trigger/cause is temporary; effects decline over time. For chemicals, consider persistence, breakdown product, and bioaccumulation potential in determining effects duration.
	Long-term (higher)	Years: effects are ongoing. For chemicals, consider persistence or bioaccumulation potential in determining effects duration.
Size/scale	Localised (lower)	Within or near an operational site, facility, etc.; affecting an area similar to or smaller than a typical operational site (for small and/or mobile sources); effects are physically contained/controlled; not a significant portion of any sensitive area.
	Moderate	Affecting an area significantly larger than a typical operational site, facility, etc.; a significant portion of a habitat, watershed or single ecological area; a significant portion of the range or occurrence of a population of a species.
	Widespread (higher)	Encompassing entire ecosystems, watersheds, or bioregions (landscape-scale); affecting most of the global range or occurrence of a species; having a noticeable impact on corporate-level environmental performance reporting.
Intensity	Minor (lower)	Minor changes to wildlife, habitat, water occurrence/drainage, or vegetation; low density. For chemical effects: low concentration or hazard* potential.
	Moderate	Moderate or partial changes to habitat, water occurrence/flow, ground cover, ground stability, vegetation or wildlife. For chemicals, moderate concentrations, bioaccumulation or hazard ¹ potential; sub-lethal, non-reproductive direct or indirect effects on organisms.
	Significant (higher)	Notable changes to, fragmentation of, or elimination of habitat, water drainage/features, ground cover, ground stability, vegetation, and/or wildlife; for chemicals, high concentrations, bioaccumulation, or hazard ¹

Effect dimension	Value	Description
		potential. Significant direct or indirect survival and/or reproductive effects on organisms.

* Chemical hazard generically includes radioactivity, reactivity, toxicity, carcinogenicity, mutagenicity, pathogenicity, reproductive effects potential, etc.

Table 5-4 Evaluation of sensitivity dimensions

Sensitivity dimension	Value	Description (applies to species, ecosystem, and/or ecosystem features/functions/services, all at same scale as consequence)
Irreplaceability	Lower	Common, plentiful.
	Moderate	Less common or plentiful, but not rare or unique.
	Higher	Unique or rare.
Vulnerability	Lower	Healthy, resilient, unthreatened, undamaged, or no remaining natural elements (such as some industrial settings).
	Moderate	Moderately resilient, existing stress or damage not significantly impairing function. Sustainable demand on resources/services.
	Higher	Not resilient or capable of recovery, highly stressed, threatened and/or endangered, functions/ services failing (such as collapsing fishery).
Influence	Lower	Providing few or no services (supporting, regulating, provisioning, cultural).
	Moderate	Considered moderately important, providing a range of ecological, cultural, social, or commercial services for humans and biodiversity.
	Higher	Highly productive and/or biodiverse, critical for human well-being (such as subsistence), functions/services provide critical support for key human/biological communities (such as clean water), considered highly important by public.

In addition to the environmental impact evaluation, Esso also evaluates the severity of impacts on socioeconomic receptors such as fisheries and cultural heritage, using the community impact severity outlined in Table 5-5 and Table 5-6.

The determination of community impact severity involves evaluating each dimension as lower, moderate, or higher based on qualitative descriptions. Once each dimension is evaluated, results for effect and sensitivity are compared against criteria to define the overall environmental and public impact consequence level (Table 5-7).

This process is undertaken as part of the Environmental Impacts and Risk Assessment Workshop (ENVID).

Table 5-5 Evaluation of community effect dimensions

Effect dimension	Value	Description
Duration	Short term (lower)	Hours to days; effects highly transitory

Effect dimension	Value	Description
	Medium term (moderate)	Weeks to months. Trigger/cause is temporary; effects decline over time.
	Long term (higher)	Years; effects are ongoing, persistent.
Size/scale	Localised (lower)	Limited to the close surroundings of an operating site, facility, etc.; affecting an area similar to or smaller than a typical operational site (for small and/or mobile sources); effects are physically contained/controlled; affecting less than 100 people.
	Moderate	Affecting an area significantly larger than a typical operating site, facility; affecting between 100-1000 people.
	Widespread (higher)	Affecting a large portion of the community of several communities; affecting more than 1000 people.
Intensity	Minor (lower)	Minor changes to local demographics; low level of immigration; no or small number of resettlements (less than ~10 households/businesses); no or minor changes to social status, education, livelihood/income and/or community safety and security; minor effects on availability/accessibility of local goods and services; minor changes to natural and/or cultural resources (water supply, fisheries, foraging/hunting grounds, erosion protection, recreational, spiritual or cultural heritage sites, etc.) no or minor changes to local customs, traditions and lifestyles.
	Moderate	Moderate changes to local demographics; moderate level of immigration; moderate number of resettlements (less than ~10 -100 households/businesses); moderate changes to social status, education, livelihood/income and/or community safety and security not significantly affecting lifestyle; moderate effects on availability/accessibility of local goods and services; moderate changes to natural and/or cultural resources not significantly affecting functionality (water supply, fisheries, foraging/hunting grounds, erosion protection, recreational, spiritual or cultural heritage sites, etc.); moderate changes to local customs, traditions and lifestyles not significantly affecting cultural identity.
	Significant (higher)	Notable changes to local demographics; high level of immigration; high number of resettlements (greater than 100 households/businesses); significant changes to social status, education, livelihood/income and/or community safety and security notably affecting lifestyle; notable effects on availability/accessibility of local goods and services; notable changes to natural and/or cultural resources significantly affecting functionality (water supply, fisheries, foraging/hunting grounds, erosion protection, recreational, spiritual or cultural heritage sites, etc.); notable changes to local customs, traditions and lifestyles significantly affecting cultural identity.

Table 5-6 Evaluation of community sensitivity dimensions

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
Irreplaceability	Lower	Average livelihood or income exceeds basic needs; diverse sources of livelihood/income (diverse commercial enterprises/jobs and/or diverse effective forms of agriculture/subsistence); essential goods and services readily available.
	Moderate	Average livelihood or income meet but do not significantly exceed basic needs; moderately diverse sources of livelihood/income (moderate diversity of commercial enterprises/jobs and/or of effective forms of agriculture/subsistence); essential goods and services moderately available (quantity/accessibility moderately limited).
	Higher	Average livelihood or income barely meet or do not meet basic needs; Few or limited sources of livelihood/income (e.g. few if any commercial enterprises/jobs and/or few effective forms of agriculture/subsistence). Essential goods and services not or rarely available.
Vulnerability	Lower	No presence of marginalized or disadvantaged people, groups, or sub-groups (e.g. local indigenous peoples); natural and/or cultural resources (water supply, fisheries, traditional hunting/foraging grounds, erosion barriers, cultural heritage/recreational areas, spiritual sites, etc.) are healthy, resilient and undamaged; local culture and heritage (cultural identity) well integrated into present lifestyle.
	Moderate	Presence of moderately marginalized or disadvantaged people, groups, or sub-groups (e.g. local indigenous peoples); natural and/or cultural resources (water supply, fisheries, traditional hunting/foraging grounds, erosion barriers, cultural heritage/recreational areas, spiritual sites, etc.) show existing stressor damage not significantly impairing function; present lifestyle in moderate conflict with local culture and heritage (cultural identity).
	Higher	Presence of highly marginalized or disadvantaged or disadvantaged people, groups, or sub-groups (e.g. local indigenous peoples); natural and/or cultural resources (water supply, fisheries, traditional agriculture/hunting/foraging grounds, erosion barriers, cultural heritage/recreational areas, spiritual sites, etc.) show existing stress or damage significantly impairing function (e.g. collapse of fisheries, eroded stormwater protection, etc.); present lifestyle in notable conflict with local culture and heritage (cultural identity at threat of dispersal).
Social structure	Lower	Homogeneous cultural identity; no pronounced social group structure or social groups are non-adverse/share common cultural identity; local hierarchy well established and stable; low crime rate; internal community conflicts addressed in a measured manner; social support and benefits (security, education, medical care, etc.) available and accessible via local offices/ institutions or designated representatives, etc.
	Moderate	Moderately homogeneous cultural identity; various cultural identities (e.g. tribes/clans) are well integrated and mostly non-adverse; moderate crime rate; internal community unrests/conflicts result in isolated

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
		confrontations without significant impairment to community safety; social support and benefits (security, education, medical care, etc.) moderately available and accessible via local offices/ institutions or designated representatives, etc. and/or moderately effective (limited staffing, several hours travel time, moderate reliability, etc.)
	Higher	Highly inhomogeneous cultural identity; dominant cultural identities (e.g. tribes/clans) display significant confrontational tendencies; high crime rate; internal community unrests/conflicts significantly impair community safety; basic human rights for others not regarded; social support and benefits (security, education, medical care, etc.) mostly unavailable or inaccessible and/or mostly ineffective (multiple days travel time, low reliability, etc.)

During the ENVID the environmental and community effects are considered together and assessed to give the worst case inherent consequence rating (impact or risk without controls in place). Controls are then established and recorded for each of the identified impacts and risks in section 6 and 7 and the overall residual determination of the environmental and public impact consequence is recorded. The outcome of the assessment for each aspect is provided in the residual consequence assessment sub-section in sections 6 and 7 and summarised in Table 6-1 and Table 7-1. An impact or risk may have either an environmental consequence or a community (public impact) consequence, or both. If an impact or risk has both consequences, the higher (more conservative) of the two consequence levels is applied.

The controls adopted to reduce and manage the inherent consequence levels are listed for each impact and risk in section 6 and 7 and then detailed with environmental performance objectives, standards and measurement criteria in Appendix H.

Socioeconomic (public impact) consequence (e.g. impact on commercial fisheries or cultural heritage) is defined in four Consequence Levels, I-IV as per the *Risk Matrix Application Guide* (ExxonMobil, 2018) by the scope of the disruption and the size of the population affected.

Table 5-7 Determination of environmental and public impact consequence

Consequence Level	Environmental impact	Public impact	Interpretative examples of environmental consequence dimension considerations
I	Potential widespread, long term, significant adverse effects	<ul style="list-style-type: none"> Extended (>3 months) national or international media coverage Large community disruption or evacuation (>1000 people) Closure of major transportation route >24 hours. 	Sensitivity of receptors are higher. Effects are longer term and widespread and/or of a higher intensity.
II	Potential localised, medium term, significant adverse effects	<ul style="list-style-type: none"> National media coverage Medium community disruption or 	Sensitivity of receptors are moderate or higher. Effects are medium to long term and/or have a moderate to higher intensity.

Consequence Level	Environmental impact	Public impact	Interpretative examples of environmental consequence dimension considerations
		evacuation (100–1000 people) <ul style="list-style-type: none"> • Closure of major transportation <24 hours. 	
III	Potential short term, minor adverse effects	<ul style="list-style-type: none"> • Public complaints; small community impact (<100 people) • Closure of secondary transportation route <24 hours • Tier 1 Process Safety Event. 	<ul style="list-style-type: none"> • Sensitivity of receptors are lower to moderate. Effects are medium term and/or moderate intensity, or • Sensitivity of receptors is lower, but effects are longer term/higher intensity, or • Effects are localised, short term and/or low intensity, regardless of receptor sensitivity.
IV	Inconsequential or no adverse effects	<ul style="list-style-type: none"> • Public complaint • Temporary closure of minor transportation route • Minor inconvenience. 	Sensitivity of receptors are lower. Effects are generally short term, localised and of low to moderate intensity.

5.5 Environmental risk assessment

5.5.1 Determination of consequence

When assessing the consequence of an unplanned event, the same methodology is used as for determining the consequence of a planned event (as described in Section 5.4).

5.5.2 Determination of likelihood

Once the most severe environmental consequence of an unplanned event is assessed, the probability of the unplanned event occurring is assessed. This is done by assessing the probability for each failure, event, or condition necessary to produce the impact.

In order to ensure that the highest possible risk is identified, scenarios with a lower severity consequence but higher probability and potentially a higher overall risk are also considered. The five categories of likelihood are as shown in Table 5-8.

Table 5-8 Likelihood Categories

Likelihood Category	Qualitative interpretation guidance	Quantitative interpretation guidance (probability of occurring per year of exposure)
A	Very likely Similar event has occurred once or more at site in the last 10 years. Has happened several times at site or many times in Company.	0.1 to 1

Likelihood Category	Qualitative interpretation guidance	Quantitative interpretation guidance (probability of occurring per year of exposure)
B	Somewhat likely Has happened once before at site or several times in Company.	0.01 to 0.1
C	Unlikely Has not happened before at site or has happened a few times in Company.	0.001 to 0.01
D	Very unlikely Have been isolated occurrences in Company or has happened several times in industry.	0.0001 to 0.001
E	Very highly unlikely Has happened once or not at all in Company. Has happened a few times or not at all in industry.	<0.0001

5.5.3 Determining significance of risk

The combination of consequence severity and likelihood of occurrence determines the level of risk. ExxonMobil’s risk framework considers existing controls when determining risk. The overall risk category is given on the basis of the likelihood of the consequence occurring after application of the control measures. The effectiveness of control measures is considered when determining the likelihood of events with control measures in place, i.e. factors such as functionality, availability, reliability, survivability, independence and compatibility of control measures, are considered.

ExxonMobil classifies risk into four risk categories (refer to Figure 5-1). The significance of each Category is as follows:

- **Category 1 Risk:** A higher risk that should have specific controls established in the short term and be reduced as soon as possible.
- **Category 2 Risk:** A medium risk that should be reduced unless it is not ‘reasonably practicable’ to do so. Reasonably practicable is:
 - The level of resource expenditure is not significantly disproportionate in relation to the resulting decrease of risk.
- **Category 3 Risk:** A medium risk that should be reduced if ‘lower cost’ options exist to do so. Lower cost denotes follow-up work that can be completed without:
 - Allocating extensive engineering, technical, and operations resources, or
 - The need for unit shutdowns or activities which may introduce other risks or use resources that may be more appropriately used to address higher risk category items.
- **Category 4 Risk:** A lower risk that is expected to be effectively managed in base OIMS practices:
 - Typically requires ‘No Further Action’
 - Risk control measures that are in place to manage the risk to Risk Category 4 should be continued.

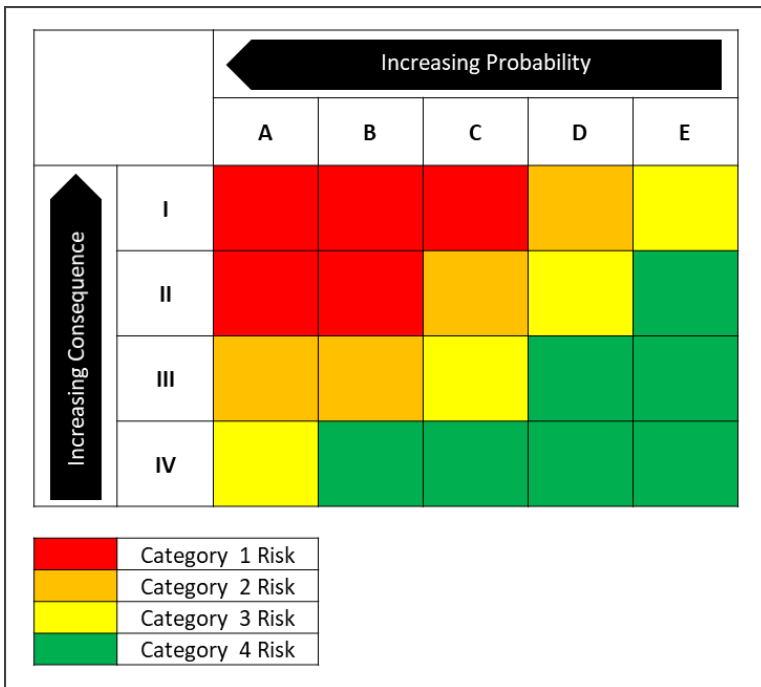


Figure 5-1 ExxonMobil risk matrix

5.6 Demonstration of As Low As Reasonably Practicable

Control measures are selected to reduce either the consequence of an impact or risk, or the likelihood of an unplanned event occurring. Control measures that are required by legislation are adopted regardless of the evaluated impact or risk level. In some cases, the risk or impact level will be so low that no control measures can be identified which reduce the consequence or probability further.

The OPGGS (Environment) Regulations 21(5)(c) requires that the EP detail how the control measures will be used to reduce the impacts and risks of the activity to ALARP and to an acceptable level.

ALARP means that the cost involved in reducing the risk further would be grossly disproportionate to the benefit gained. The ALARP principle arises from the fact that infinite time, effort and money could be spent attempting to reduce a risk or impact to zero. Where good practice controls measures do not sufficiently reduce the risk or impact level, consideration of additional control measures may be required, including undertaking an assessment of impacts or risks, costs and environmental benefits for identified control measures.

NOPSEMA’s guideline *Environment Plan decision making* (NOPSEMA, 2022) states that in order to demonstrate ALARP, a titleholder must:

“adopt additional control measures or increase effectiveness of existing control measures if the cost of doing so is not grossly disproportionate to the environmental benefit gained”.

There is no universally accepted guidance to applying the ALARP principle to environmental assessments. In alignment with NOPSEMA’s guidance note *ALARP* (NOPSEMA, 2020), Esso has adapted the approach developed by Oil and Gas UK (OGUK) (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 severity and several guiding factors:

- activity type
- risk and uncertainty
- relevant person influence.

Good practice controls, (as discussed in Section 5.6.1) are considered sufficient demonstration of ALARP in cases where the risk is relatively well understood, the potential impacts are low, activities are well practised, and there are no conflicts with company values nor significant media interest. This is referred to as Decision Context A.

An engineering risk assessment is required to demonstrate ALARP in cases where there is greater uncertainty or complexity around the activity and/or risk, the potential impact is moderate, it may attract local media attention and some persons may object. This is referred to as a Decision Context B.

A Decision Context C typically involves sufficient complexity, high potential impact, uncertainty, or relevant person influence to require a precautionary approach. In this case, relevant good practice still must be met, engineering risk assessment is required, and the precautionary approach applied for those controls that only have a marginal cost benefit.

		A	B	C
		Factor		
Decision Context	Type of Activity	Nothing new or unusual Represents normal business Well-understood activity Good practice well-defined	New to the organization or geographical area Infrequent or non-standard activity Good practice not well defined or met by more than one option	New and unproven invention, design, development or application Prototype or first use No established good practice for whole activity
	Risk and Uncertainty	Risks are well understood Uncertainty is minimal	Risks amenable to assessment using well-established data and methods Some uncertainty	Significant uncertainty in risk Data or assessment methodologies unproven No consensus amongst subject matter experts
	Stakeholder Influence	No conflict with company values No partner interest No significant media interest	No conflict with company values Some partner interest Some persons may object May attract local media attention	Potential conflict with company values Significant partner interest Pressure groups likely to object Likelihood of adverse attention from national or international media
	Assessment Technique			
	Good Practice	▼	▼	▼
	Engineering Risk Assessment		▼	▼
	Precautionary Approach			▼

Figure 5-2 As Low As Reasonably Practicable decision support framework, based on OGUK (OGUK, 2014)

The ALARP Decision Context has been identified for each aspect in Sections 6 and Section 6.2.

5.6.1 Good practice

OGUK (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".

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

- requirements from Australian legislation and regulations
- relevant Australian policies
- relevant Australian Government guidance
- relevant industry standards and/or guidance
- relevant international conventions.

If the ALARP technique is determined to be good practice (Decision Context A), 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 are also identified at this point.

5.6.2 Engineering risk assessment

All impacts and risks that require further assessment are subject to an engineering risk assessment (OGUK, 2014) in which a comparative assessment of risks, costs, environmental and socioeconomic benefit is conducted. A cost-benefit analysis should show the balance between the environmental benefit and the cost of implementing the identified measure.

5.6.3 Precautionary approach

If the assessment, considering all available engineering and scientific evidence, is insufficient, inconclusive, or uncertain, then a precautionary approach to hazard management is needed (OGUK, 2014).

A precautionary approach will mean that environmental considerations are expected to take precedence over economic considerations, and a control measure that may reduce environmental impact is more likely to be implemented.

5.7 Demonstration of acceptable level

One of the objects of the OPGGS (Environment) Regulations is to ensure that any petroleum activity carried out in an offshore area is carried out in a manner such that environmental impacts and risks will be of an acceptable level. This is also one of the key criteria for acceptance of an EP.

The acceptable level of environmental impact and risk for each receptor needs to be defined before the Environmental Performance Outcomes (EPOs) can be decided and the evaluation of those impacts and risks can take place.

An ‘acceptable level’ is the specified amount of environmental impact and risk that the activity may have which would not be inconsistent with relevant principles, not compromise management/conservation/protection objectives. The process involves the attainment of relevant person/wider-community views in defining acceptable levels.

Esso considers a range of factors when evaluating the acceptability of environmental impacts or risks associated with its activities. This evaluation works at several levels, as outlined in Table 5-9 and is based on NOPSEMA’s guidance note on *Environment Plan content requirement* (NOPSEMA, 2020).

These factors are used to demonstrate acceptability in Sections 6 and Section 6.2.

Table 5-9 Demonstration of acceptability test

Factor	Demonstration of acceptability	
Risk assessment process for unplanned event	The level of environmental risk is either Category 2, 3 or 4.	
Consequence assessment for planned event	The level of environmental consequence is 3 or below.	
Principles of Ecologically Sustainable Development (ESD)	Principles of ESD as per EPBC Act Section 3A.	Applicability to this EP.
	Decision making processes should effectively integrate both long term and short term economic,	This principle is inherently met through the EP assessment process. This principle is not considered separately for each acceptability evaluation.

Factor	Demonstration of acceptability	
	environmental, social and equitable considerations.	
	If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.	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, further assessment is undertaken to determine if there is significant uncertainty in the evaluation.
	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.
	The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making.	Impact assessment is used to assess whether there are significant impacts to relevant receptors to ensure that biological diversity and ecological integrity is conserved.
	Improved valuation, pricing and incentive mechanisms should be promoted.	Not relevant to this EP.
Legislative and other requirements	<p>All good practice control measures have been identified for the aspect.</p> <p>Acceptable levels identified in relevant EPBC Act listed species recovery plans or approved conservation advices have been considered. Impacts and risks (where applicable) considered to be consistent with the requirements, expectations and principles of the relevant plans.</p> <p>Impact and risk assessment considers if there are any MNES in the area of the activity and if so, undertakes the activity in a manner that will not have a significant impact on MNES as described by the significant impact criteria in Matters of National Environmental Significance - Significant impact guidelines 1.1 (Department of the Environment, 2013). This includes consideration of the activity in its broadest scope and where possible, adopts control measures to avoid or reduce impacts to MNES.</p> <p>Undertake the activity in a manner that will not interfere with other marine users to a greater extent than is necessary for the reasonable exercise of right conferred by the titles granted, per OPGGS Act Section 280.</p>	
Internal context	All Esso management system standards and impact or risk control processes have been identified for the aspect.	
External context	Relevant person feedback has been considered during preparation of the EP.	

6 Environmental impact assessment

A discussion of the environmental impacts associated with the activity to be carried out under this EP, the assessed consequences and the control measures that will be implemented to reduce impacts to ALARP and acceptable levels, are presented in this section. Alternative controls identified and considered to ensure impacts are ALARP and comply with the acceptability criteria are also covered. Environmental Performance Outcomes (EPOs, controls, Environmental Performance Standards (EPSs), and measurement criteria are provided for each aspect of the planned activities in Appendix H.

The following definitions are used in this EP, as defined in Regulation 5 of the OPGGS (Environment) Regulations:

- EPO – a measurable level of performance required for the management of environmental aspects of an activity to ensure that environmental impacts and risks will be of an acceptable level (i.e. a statement of the environmental objective).
- EPS – a statement of the performance required of a control measure.
- Measurement criteria (not defined in the regulations) – defines the measure by which environmental performance used to determine whether the EPSs and EPOs have been met.

Appendix H presents the EPOs, controls, EPSs and measurement criteria required to manage the impacts identified in this Section.

A summary of the Impacts and risk assessment is provided in Table 6-1

Table 6-1 Summary Impact Assessment

Identifier	Hazard	Inherent Consequence Level	Residual Consequence Level
1	Physical presence - seabed disturbance	IV	IV
2	Physical interaction - other marine users	IV	IV
3	Planned discharge- sewage and food waste	IV	IV
4	Sound Emissions	III	IV
5	Light Emissions	IV	IV
6	Planned discharge – Treated bilge and deck drainage	IV	IV
7	Emissions to air	IV	IV
8	Planned discharge- cement	IV	IV
9	Planned discharge – subsea	IV	IV
10	Planned discharge – surface	III	IV

6.1 Physical presence – Seabed disturbance

6.1.1 Sources of seabed disturbance

Positioning the JUR on location will be undertaken in accordance with an approved JUR move procedure. Once the JUR is in the desired location, the support legs are lowered to contact the seabed and the JUR is jacked up out of the water.

Each of JUR's three triangular open truss-type legs is fitted with a spud can-type footing. Sea water is used to ballast the JUR and load the legs to ensure the foundations are satisfactory and that all the spud cans have achieved the required/expected penetration and can adequately support the JUR for the duration of the activities at the site. The total area of seabed disturbance associated with spud can interaction with the seabed is approximately 0.06 hectares. When the JUR is to be moved to the next location, the legs are retracted to re-float the vessel. In the unlikely event that difficulties are experienced when retracting the legs, a fixed water jet system can be activated at the top and bottom surface of the spud cans to aid in dislodging the spud cans from the seabed.

The last step of the P&A sequence is removal of the subsea wellheads, thus leaving the seafloor clear of any obstructions. Removal of the wellheads will not be undertaken until the P&A has been completed in accordance with the WOMP.

Retrieval of subsea infrastructure will result in an area of approximately 50 m² of benthic disturbance per well. Therefore, the total disturbed area is expected to be relatively small.

6.1.2 Impacts of seabed disturbance

Impacts of seabed disturbance on receptors, including benthic habitats and assemblages and demersal fish, considered are:

- change in habitat (and smothering)
- change in water quality (increased turbidity in the water column near the seabed).

6.1.3 Impact assessment

6.1.3.1 Change in habitat and smothering

The benthic habitat within the OAs is characterised by a homogenous soft sediment and shelly seabed, infauna communities and sparse epibiotic communities. There are no known sensitive seabed features (such as reefs, sponge gardens, seagrass meadows or scallop beds), so positioning of the JUR will not result in a loss of sensitive habitats.

Any impact will be limited to the immediate vicinity of the well locations and thus the extent of potential impact is considered to be localised. The disturbance may result in the mortality of flora and sessile fauna within this footprint and potentially the mortality of benthic infauna associated with the habitat. However, the area that will be disturbed compared with the overall extent of this habitat in the region is small and consequently, there will be no long-term impact on the diversity and abundance of benthic fauna.

6.1.3.2 Change in water quality

Turbidity may occur when seabed sediments are stirred up during wellhead cutting and placement of spud cans however this disturbance will settle quickly after cutting is completed (hours, not days).

Any turbidity created is likely to be within the limits of natural variability when considering the turbidity created by currents in the open-water environment of the OAs and is not addressed further.

6.1.4 Controls

- **CMP1:** Pre-activity site inspection
- **CMP20:** JUR move procedure
- **CM32:** NOPSEMA Accepted Well Operations Management Plan
- **CMP38:** Remove Wellhead (WH) and casing strings at or below mudline

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.1.5 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.1.6 Demonstration of As Low as Reasonably Practicable

Table 6-2 Decision Context and justification

Decision Context A
<p>Seabed disturbance from offshore activities is a common occurrence both nationally and internationally. Removal of the equipment from the seabed (in this case, wellheads) is well understood and executed in a controlled manner which is accepted by industry. The area of disturbance is known and identified as Consequence Level IV (the lowest level).</p> <p>During consultation with relevant persons, no objections or claims regarding seabed disturbance were made. Esso believes ALARP Decision Context A should apply.</p>

Table 6-3 Good practice controls

Good practice	Adopted	Control	Rationale
JUR site survey	✓	CMP1: Pre-activity site inspection	Esso will undertake a seabed ROV survey prior to field activities to confirm status of wellhead and detail any obstructions in the area, including seabed conditions and anomalies as part of field planning.

Table 6-4 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.1.7 Demonstration of acceptability

Table 6-5 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The proposed activities align with the requirements of the OPGGS Act:

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> Section 280(2) – No interference with the conservation of the resources of the sea and seabed to a greater extent than is necessary for the exercise of the rights conferred by titles granted. Schedule 3 (occupational health and safety) of the OPGGS Act and <i>Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009</i> (OPGGS (Safety) Regulations) –Require the operator of each offshore facility to prepare a Safety Case for submission to NOPSEMA. Activities at a facility, including positioning and jacking operations, must be conducted in accordance with a Safety Case that has been accepted by NOPSEMA. Section 572 – Requirement to remove from the relevant title areas structures and all equipment and other property that is neither used nor to be used in connection with the operations.
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	Although there is no specific standard related to offshore (i.e. seabed) land use, the controls proposed meet the requirements of the Upstream Standard on Land Use specifically to “avoid use of land within environmentally or socioeconomically sensitive areas” and “site selection process considers impacts on the ecological and social environment”.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements; and OIMS System 8-1 objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner. JUR contractor will be selected in accordance with Esso’s OIMS procurement processes.

Factor	Demonstration criteria	Criteria met	Rationale
External context	Relevant person concerns have been considered/addressed through the consultation process.	✓	No specific relevant person concerns have been raised concerning seabed disturbance.

6.2 Physical interaction – Other marine users

6.2.1 Sources of interaction with other marine users

The movement of vessels within the OAs, and the physical presence of the JUR and support vessels has the potential to result in interactions with other marine users such as commercial and recreational fishing vessels, and merchant shipping vessels. The JUR P&A wells are within PSZs mostly inside, or just outside, the Bass Strait ATBA. The presence of the JUR and associated supply vessels is expected to have minor impacts to commercial fishing while the PSZs are in place. There will be one PSZ in place at a time, which will move consistent with the location of the JUR.

Approved PSZs will be in place around the well locations during field operations (PSZs to be established at least one month before start of field activities).

In order to manage shipping interactions, Esso maintains an ongoing dialogue with AMSA and the Australian Hydrographic Office (AHO) in order to minimise the risk of collisions during marine operations.

At the completion of P&A activities it is planned to remove the wellheads and the temporary guide bases as noted in Section 2.6.3. In the unlikely event that the wellhead is not able to be retrieved, it will be temporarily left in-situ and removal of equipment will be considered as part of Esso’s broader decommissioning program (refer to Section 2.6.4). This work will be completed as soon as practicable and no later than the end of life of this EP.

Note that this section deals with displacement or interference in a socioeconomic sense; collision risk (and potential diesel spill impacts) is addressed in Section 7.6.

Impacts of interaction with other marine users considered are:

- changes to the function, interests or activities of other users through disruption to commercial activities.

Disruption to commercial activities includes:

- diversion from navigation path (displacement of third-party vessels)
- loss of access to PSZ (exclusion from fishing grounds and subsequent loss of catch)
- obstacle to trawling (presence of infrastructure).

6.2.1.1 Change to the function, interests or activities of other users – Shipping

Displacement of third-party vessels by the JUR is unlikely to occur because the activities will be predominantly occurring inside the International Maritime Organisation (IMO) approved Bass Strait Traffic Separation Scheme (TSS). The TSS routes shipping traffic away from the OA in accordance with Rule 10 of COLREGs. In addition, the JUR is stationary and highly visible (due to its height above the water line and lighting), meaning vessels have sufficient time to detect the JUR (visually and by radar) and navigate around the JUR and PSZ.

6.2.1.2 Change to the function, interests or activities of other users – Fisheries

Implementation of the relevant persons identification process has resulted in identifying the following fisheries which may have an active presence in the relevant OAs: the Victorian Wrasse (Ocean) Fishery, the Commonwealth Trawl Sector, Shark Gillnet Sector and Southern Squid Jig fisheries. Fishing intensity plots for the other Commonwealth fisheries indicate low or no active presence in the area. Fishing intensity for State fisheries could not be obtained.

Based on annual fishing records and the size of the fishing grounds, the proposed activities and use of PSZs are not expected to result in a significant impact to commercial fishing operations (via loss of catches, loss of fishing grounds or damage to fishing equipment).

As part of the P&A activity it is planned to remove wellheads and temporary guide bases, which will reduce the risk of entanglement of fishing gear. Any required temporary storage will have minor impacts due to the small footprint against the large area available for fishing in the region, and protruding height above seabed. Equipment situated below the mudline will not have any ongoing adverse impact on other marine users.

On completion of P&A activities the risk is assessed to be equal or less than the current state which is assessed to be very low.

6.2.2 Controls

- **CMP2:** Petroleum Safety Zone
- **CM36:** Pre-start notifications

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.2.3 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.2.4 Demonstration of As Low as Reasonably Practicable

Table 6-6 Decision Context and justification

Decision Context A
Offshore petroleum operations are widely undertaken both locally, nationally and internationally.
The impacts associated with marine user interactions are well managed via legislative control measures. These controls are understood and well implemented by the industry.
The use of IMO approved TSSs in accordance with COLREGs have proven to be effective in managing vessel interactions. The Bass Strait TSS is well established.
No concerns were raised during relevant persons consultation and the socioeconomic consequence was identified as Consequence Level IV (the lowest level).
Esso believes ALARP Decision Context A should apply.

Table 6-7 Good practice controls

Good practice	Adopted	Control	Rationale
PSZs	✓	CMP2: Petroleum Safety Zone	NOPSEMA is responsible for administration of PSZs as provided for in the OPGGS Act. PSZs are specified areas surrounding petroleum wells, structures or equipment which vessels or classes of vessel are prohibited from entering or being present in.
Pre-start notifications	✓	CM36: Pre-start notifications	Under the <i>Navigation Act 2012</i> , the AHO is responsible for maintaining and disseminating hydrographic and other nautical information and nautical publications including: <ul style="list-style-type: none"> • Notices to Mariners • AUSCOAST warnings.

Good practice	Adopted	Control	Rationale
			<p>Details of the PSZ will be published in Notices to Mariners, thus enabling other marine users to plan their activities, and minimising disruption to exclusion zones.</p> <p>Relevant details will be provided to the Joint Rescue Coordination Centre (JRCC) to enable AUSCOAST warnings to be disseminated.</p> <p>Pre-start notices will be provided to all relevant persons approximately four weeks and then one week prior to activities commencing.</p>

Table 6-8 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.2.5 Demonstration of acceptability

Table 6-9 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>Legislation and other requirements considered as relevant include:</p> <p>OPGGS Act:</p> <ul style="list-style-type: none"> Section 280 requires that a person carrying on activities in an offshore area under the permit, lease, licence, authority or consent must carry on those activities in a manner that does not interfere with navigation or fishing (among others) to a greater extent necessary than for the exercise of the rights conferred by titles granted. Section 619 prohibits unauthorised vessels from entering a PSZ. <p>The exclusion of fishing within the PSZ is considered an acceptable impact for safety reasons, in particular to avoid interaction between the subsea facilities and other marine users, a PSZ is required for Esso to exercise the rights conferred by the production title.</p>

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> Navigation Act 2012 – Chapter 6 (Safety of Navigation) Part 6 deals with safe navigation including provisions about reporting of movement of vessels. <p>Marine Orders are made under the:</p> <ul style="list-style-type: none"> Navigation Act 2012 Protection of the Sea (Prevention of Pollution from Ships) Act 1983 Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 Marine Orders 1 to 98 – Generally give effect to international obligations and standards and apply to regulated Australian vessels, foreign vessels, and some domestic commercial vessels Marine Order 18 (Measures to enhance maritime safety) 2013 Marine Order 27 (Safety of navigation and radio equipment) 2016 Marine Order 30 (Prevention of collisions) 2016 Rule 10 of COLREGs
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the ExxonMobil Upstream Socioeconomic Management Standard (ExxonMobil, 2021a) specifically in relation to managing community relations.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements; and OIMS System 10-1 objective to maintain public awareness and confidence in the Operations Integrity (OI) of operations and facilities.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning interference with commercial activities. Esso consulted with AMSA regarding legislative control measures.

6.3 Planned discharge – Sewage and food waste

6.3.1 Sources of sewage and food waste discharges

Vessels and facilities used in the oil and gas industry vary in size but often include accommodation facilities for crew and passengers. The crew and passengers will generate wastes, including food wastes (or putrescibles), and the use of ablution, laundry and galley facilities will result in the generation of sewage and grey water which are treated before being routinely discharged to the marine environment.

The average volume of putrescible waste from each vessel depends on the number of persons on board and is estimated at 1 to 2 kg per person per day (NERA, 2017). Total volumes of sewage and grey water (from the use of ablution, laundry and galley facilities) typically generated at offshore facilities ranges between 0.04 and 0.45 m³ per person per day (NERA, 2017). Assuming 116 people working on the JUR each day (the maximum POB for the rig) and 15 people on a support vessels (a total of 131 people), this equates to a range of 5.24 – 58.95 m³ of sewage and grey water discharged daily.

6.3.2 Impacts of sewage and food waste discharges

Impacts of the discharge of sewage or food waste considered are:

- change in water quality (temporary and localised increase in nutrients and biological oxygen demand)
- change in fauna behaviour (changing predator/prey dynamics from increased scavenging behaviours).

6.3.2.1 Change in water quality

The PBW and a number of protected seabirds such as shearwaters, albatrosses and petrels have foraging habitat overlapping the OAs and EMBA.

Sewage will be treated through sewage treatment plants to the MARPOL standard, so there are no potential impacts relating to the release of particulate matter, chemicals and pathogens in untreated sewage.

Nutrients in sewage, such as phosphorus and nitrogen, may contribute to eutrophication of receiving waters (although usually only calm, inland waters) causing algal blooms, which can degrade aquatic habitats by depleting oxygen levels, reducing light levels and producing certain toxins, some of which are harmful to marine life and humans. Given the tidal movements and currents in deep open waters, eutrophication of receiving waters will not occur.

Discharges will disperse and dilute rapidly, with concentrations of wastes significantly dropping with distance from the discharge point. The effects of sewage and sillage discharges on the water quality at Scott Reef were monitored for a drill rig operating near the edge of the deep-water lagoon area at South Reef. Monitoring at stations 50 m, 100 m and 20 m downstream of the rig and at five different water depths confirmed that the discharges were rapidly diluted in the upper 10 m water layer and no elevations in water quality monitoring parameters (e.g. total nitrogen, total phosphorous and selected metals) were recorded above background levels at any station (Woodside Energy, 2011).

The receptors with the greatest potential to be impacted are those in the immediate vicinity of the discharge. Given that sewage discharges from vessels and facilities are at or near the surface, and are buoyant discharges, the receptors with the potential to be impacted are also those within or on surface waters; for example, plankton, fish and other marine fauna.

Plankton forms the basis of all marine ecosystems, and plankton communities have a naturally patchy distribution in both space and time (ITOPF, 2011). They are known to have naturally high mortality rates (primarily through predation), however in favourable conditions (e.g. supply of nutrients), plankton populations can rapidly increase. Once the favourable conditions cease, plankton populations will collapse and/or return to previous conditions. Plankton populations have evolved to respond to these environmental perturbations by copious production within short generation times (ITOPF, 2011). However, any potential change in phytoplankton or zooplankton abundance and composition is expected to be localised, typically returning to background conditions within tens to a few hundred metres of the discharge location (Abdellatif, Ali, Khalil, & Nyonje, 1993) (Axelrad, et al., 1981) (Parnell, 2003).

Effects on environmental receptors along the food chain, namely, fish, reptiles, birds and cetaceans are therefore not expected beyond the immediate vicinity of the discharge in deep open waters.

6.3.2.2 Change in fauna behaviour

The overboard discharge of macerated food wastes has the result of creating a localised and temporary food source for scavenging marine fauna or seabirds, whose numbers may temporarily increase as a result. This in turn can provide an increase in food source for predatory species. The rapid consumption of this food waste by scavenging fauna, and physical and microbial breakdown, ensures that the impacts of putrescible waste discharges are insignificant and temporary.

6.3.3 Controls

- **CM9:** Class certification

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.3.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.3.5 Demonstration of As Low as Reasonably Practicable

Table 6-10 Decision Context and justification

Decision Context A
<p>Discharge of sewage, greywater and food waste offshore (from vessels and other facilities) is a commonly practised activity.</p> <p>The potential impacts are well regulated via various treaties and legislation, both nationally and internationally, which specify industry best practice control measures. These are well understood and implemented by the industry. Monitoring programs have been undertaken previously and a Consequence Level IV (the lowest level) identified.</p> <p>No objections or claims were raised by relevant persons with regard to the discharge of sewage and food waste.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-11 Good practice controls

Good practice	Adopted	Control	Rationale
<p>MARPOL Annex IV Regulations for the Prevention of Pollution by Sewage from Ships.</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships.</p>	✓	<p>CM9: Class certification</p>	<p>The vast majority of commercial ships are built to and surveyed for compliance with the standards (i.e. Rules) laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the International Convention for the Safety of Life at Sea, (SOLAS), the 1988 Protocol to the International Convention on Load Lines and MARPOL.</p> <p>A vessel built in accordance with the applicable Rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those Rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant</p>

Good practice	Adopted	Control	Rationale
			<p>surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex IV Regulations for the Prevention of Pollution by Sewage from Ships specifically requires vessels (as appropriate to class) to hold an International Sewage Pollution Prevention certificate. Sewage treated in a MARPOL-compliant sewage treatment plants may be discharged no less than 3 nm from shore, and untreated sewage no less than 12 nm.</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships specifically requires that food waste is macerated or ground to particle size <25 mm. Macerated food waste may be discharged no less than 3 nm from shore and unmacerated food waste no less than 12 nm (and not within the PSZ of fixed platforms).</p>

Table 6-12 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.3.6 Demonstration of acceptability

Table 6-13 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of MARPOL Annexes IV and V have been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia:</p> <ul style="list-style-type: none"> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</i> • <i>Marine Order 96 (Marine pollution prevention – sewage) 2018</i>

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> Marine Order 95 (Marine pollution prevention – garbage) 2018.
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the ExxonMobil’s Upstream Water Management Standards specifically “to comply with regulatory requirements and legally binding arrangements related to waste management” and “meet specified discharge criteria” including MARPOL requirements.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements; and OIMS System 8-1 objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning sewage and food waste discharges.

6.4 Sound emissions

6.4.1 Sources of sound emissions

Table 6-14 summarises the sources of sound that will be generated for this activity.

Table 6-14 Summary of underwater sound sources

Sound source	Impulsive sound?	Continuous sound?	Duration of sound
JUR	No	Yes – engines, onboard machinery, drill string	Duration of activity (12-16 months)
Support vessels	No	Yes – DP thrusters, onboard machinery	Duration of activity – while in the PSZ (12-16 months)
Tow vessels	No	Yes – propellers, DP thrusters in an	Only use DP thrusters in an emergency or for safety reasons during rig moves.

Sound source	Impulsive sound?	Continuous sound?	Duration of sound
		emergency or for safety reasons.	
Conductor pile driving (Marlin B only)	Yes – operation of hydraulic driving hammer	No	15-30 days
Geotechnical investigations (Bream-B location only, contingency only)	Yes	No	While on location – 3 days
ROV	No	Yes – small motor and propeller	Several hours at each P&A location
ROV cutting tool (wellhead cutting and removal)	No	Yes – cutting action	Several hours at each P&A site
Helicopters	No	Yes – rotor operation	Up to 10 minutes each weekday while in the OA
Subsea positioning equipment (Ultra-Short Base Line [USBL] transponders)	Yes – short ‘chirps’	No	Duration of activity (12-16 months)

Table 6-15 defines the acoustic terms used throughout this section.

Table 6-15 Acoustic terminology used in this impact assessment

Term	Definition
Sound	A time-varying pressure disturbance generated by mechanical vibration waves travelling through a fluid medium such as air or water.
Decibel (dB)	<p>Sound is measured on a logarithmic scale that expresses the ratio of two values of a physical quantity. It is used to measure the amplitude or ‘loudness’ of a sound. As the dB scale is a ratio, it is denoted relative to some reference level, which must be included with dB values if they are to be meaningful. The reference pressure level in underwater acoustics is 1 micropascal (µPa), whereas the reference pressure level used in air is 20 µPa, which was selected to match human hearing sensitivity.</p> <p>As a result of these differences in reference standards, sound levels in air are not equal to underwater levels.</p> <p>There are four main metrics for underwater sound (ISO/DIS 18405.2:2017) – SEL, SPL, PK and PK-PK, all described in this table.</p>
Frequency	<p>The rate of oscillation of a periodic function measured in cycles-per-unit-time. The reciprocal of the period.</p> <p>Unit: hertz (Hz). 1 Hz is equal to 1 cycle per second.</p>

Term	Definition
Source level	<p>A measure of sound pressure at a nominal distance of 1 m from a theoretical point source that radiates the same total sound power as the actual source.</p> <p>Source level can be expressed as an SPL, SEL or PK.</p> <p>Unit: dB re 1 $\mu\text{Pa}^2\text{m}^2$ (pressure level) or dB re 1 $\mu\text{Pa}^2\text{m}^2\text{s}$ (exposure level).</p>
Impulse/Pulse	<p>The terms used to refer to the discharge of a sound source are impulse and pulse, therefore the terms used to describe a single discharge are per-impulse or per-pulse.</p>
Sound exposure level (SEL)	<p>A measure related to the sound energy in one or more pulses, or the ratio of the time-integrated squared sound pressure to the specified reference value.</p> <p>Unit: dB re 1 $\mu\text{Pa}^2\text{s}$</p>
Peak-to-peak sound pressure (PK-PK) Impulsive sounds	<p>Sum of the peak compressional pressure (highest pressure variation) and the peak rarefactional pressure (lowest pressure variation) during a specified time interval. PK- PK is the difference between the minimum and maximum instantaneous sound pressure levels in a stated frequency band attained by an impulsive sound.</p> <p>Unit: dB re 1 μPa</p>
Zero-to-peak sound pressure (PK)	<p>The greatest magnitude of the sound pressure during a specified time interval. PK levels are modelled to assess mortality and potential mortality to fish larvae and eggs, fish and turtles. A simple sound wave and three common methods to characterise the loudness of sounds, including zero-to-peak sound pressure.</p> <p>Unit: dB re 1 μPa.</p>
Root-mean-square sound pressure level (SPL)	<p>The decibel ratio of the time-mean-square sound pressure, in a stated frequency band, to the square of the reference sound pressure over the duration of the acoustic event (i.e., the duration of a single sound pulse).</p> <p>Because the SPL represents the effective sound pressure over the full duration of the acoustic event rather than the maximum instantaneous peak pressure (PK or PK-PK), it is regularly used to represent the effective or perceived loudness of a sound and to assess the potential for a behavioural response from marine fauna.</p> <p>Unit: dB re 1 μPa.</p>
TTS in hearing	<p>Temporary Threshold Shift (TTS) is the temporary loss of hearing sensitivity caused by excessive noise exposure.</p> <p>Exposure to sufficiently intense sound may lead to an increased hearing threshold in any living animal capable of perceiving acoustic stimuli (Finneran, 2016. If this shift is reversed and the hearing threshold returns to normal, the effect is called a TTS. The onset of TTS is often defined as threshold shift of 6 dB above the normal hearing threshold (Southall, et al., 2019).</p> <p>Impairment to the hearing apparatus of a marine animal may result from a fatiguing stimulus measured in terms of SEL, which considers the sound level and duration of the exposure signal. Intense sounds may also damage the hearing apparatus independent of duration, so an additional metric of peak pressure (PK) is needed to assess acoustic exposure impairment risk.</p>

Term	Definition
PTS in hearing	<p>Permanent Threshold Shift (PTS) is the permanent loss of hearing sensitivity caused by excessive noise exposure. It is considered an auditory injury. If a TTS does not return to normal, the residual shift is called a PTS.</p>
Behavioural response	<p>The context of sound exposure plays a critical and complex role in behavioural responses in marine mammals (Gomex, et al., . For example, different species (and different individuals or groups within a species) may respond differently to varying levels of sound depending on their behaviours and motivation at the time (depending on whether they're foraging, socialising, resting or mating) and other factors such as the type of sound, duration of exposure, and the suddenness of the onset of the received sound (Ellison, Southall, Clark, & Frankel, 2012.</p> <p>The NMFS in the USA uses an impulsive noise criteria threshold of 160 dB re 1 µPa (SPL) for potential behavioural disturbance to marine mammals (NOAA, 2019. The threshold for behavioural response represents the level at which a moderate behavioural response may occur, such as changes in swimming speed, direction and dive profile, localised deviations in migratory patterns, brief to moderate shift in group distribution, short term cessation or modification of vocal behaviour (McCauley, et al., . Avoidance, however, is not directly related to sound level thresholds but also influenced by the state of the individuals (e.g., their reproductive, health and foraging condition) and the context of exposure. It is considered that avoidance behaviour represents only a minor effect on either the individual or the species unless avoidance results in displacement of whales from areas of biological importance such as nursery, resting or feeding areas during an important period for the species.</p> <p>Higher received levels are not always associated with stronger behavioural responses and vice versa, and a clear dose-response relationship has not been identified (Southall, et al., . In addition, a behavioural response does not necessarily equate to a significant avoidance or deviation in cetacean movements that would actually displace individuals or the population from the wider area. Similarly, proximity of the animal to the sound source, irrespective of received level, has been identified as an influencing factor, with behavioural response in humpback whales being both dependent on the proximity of whale to the vessel source and also the received level (i.e., at the same received level no behavioural response was detected when the source was greater than 3 km away) (Dunlop, 2016.</p>
Masking	<p>Acoustic masking may occur when a noise impedes the ability of an animal to perceive a signal (Erbe, Reichmuth, Cunnigham, Lucke, & Fooling, 2015. For this to occur the noise must be loud enough, have similar frequency content to the signal, and must happen at the same time (Wood, Southall, & Tollit, 2012.</p> <p>Masking and the potential effects of masking on communication and listening space of marine mammals are not fully understood and remain an area of active research (Cunnigham & Mountain, 2014 (Tenneson, 2016 (Gabriele, Ponirakis, Clark, Wombe, & Vanselow, 2018. Currently, there are no specific received level thresholds for reliably assessing or regulating masking responses to underwater noise (Gomex, et al., .</p>

6.4.1.1 JUR

Fixed structures such as JURs have lower radiated sound levels than floating platforms because they do not use thrusters or propellers to maintain station. Equipment operating onboard these facilities can contribute to marine environment sound however, airborne and structure-borne (vibration) pathways are considered more significant on floating platforms where equipment can be located below the water line (NCE, 2007.

Underwater noise produced from structures standing on metal jack-up supports is relatively low given the small surface areas available for sound transmission and also given the location of machinery above the waterline. It is therefore expected that the dominant pathway for sound generation is structure-borne (i.e. vibration from machinery passing through the legs) (NCE, 2007).

Quantitative analysis of fish and invertebrate assemblage dynamics in association with a North Sea oil and gas installation complex (Todd, Edward, Lavallina, & Macreadie, 2018) reported on the near-field recordings of underwater noise from the sides of a JUR during drilling operations in the North Sea (water depth of 40 m). The reported decedecade received levels for drilling operations (25 Hz to 12.5 kHz) were back propagated by in *Esso Bass Strait Operations Modelling: Assessing Marine Fauna Sound Exposures* (Matthews, Connell, & McPherson, 2022) to provide conservative estimates of the Monopole Source Level (MSL). The spectrum was extrapolated by continuing the attenuation of the last decedecade, that is assuming a 10 dB per decade at frequencies below 25 Hz, and 25 dB per decade at frequencies above 12.5 kHz. This was used to estimate the sound pressure level (SPL) of 172.9 dB re 1 μPa m associated with JUR operations.

6.4.1.2 Support vessels

Support vessels activities are described in Section 2.9.2. A support vessel may at times be 'on standby' outside the 500 m PSZ. When on standby, a support vessel will reduce to the minimum number of thrusters and power required for safe navigation. A support vessel will only come alongside the JUR (and remain alongside using DP) during loading/offloading which typically takes less than six hours. Only one support vessel will be alongside the JUR at any one time.

Underwater sound that radiates from vessels is produced mainly by propeller and thruster cavitation. The typical sound levels generated by vessels are broadband and typically increase with increasing vessel size. Sound levels tend to be the highest when thrusters are used to position the vessel (DP) and when the vessel is transiting at high speeds.

Vessels will operate under the *International Guidelines for The Safe Operation of Dynamically Positioned Offshore Supply Vessels* (IMCA, 2022) which means that normally, vessels operate at levels less than 50% capacity. These guidelines are used to develop the Activity Specific Operating Guidelines (ASOG) for each vessel and include safe operating limits (based on relevant factors and primarily include power consumption and thruster output levels).

The MSLs and the spectra for the *Skandi Feistein* were previously measured during a monitoring program conducted by JASCO for Esso (Matthews, Connell, & McPherson, 2022 Appendix J). As the *Skandi Darwin* has greater installed power than the *Skandi Feistein* (*Feistein* has 6,160 kW; *Darwin* has 7130 kW), the *Darwin* was used in the modelling as a conservative approach. The acoustic source level and spectrum were scaled up to give an estimated broadband energy source level (ESL) for the vessels of 173.8 dB re 1 $\mu\text{Pa}^2\text{m}^2\text{s}$ (Muellenmeister et al., 2023). This corroborates earlier research that indicates tugboats, crew boats and supply ships in the 50-100 m size class have an energy source level in the range of 165-180 dB re 1 μPa (Gotz, et al., 2009). Cooper Energy (2023) determined source levels from an Inspection, Maintenance and Repair Vessel (IMR) and dive support vessel (DSV) working in Gippisland (16 km southeast of the ADE) to be 185.2 dB re 1 μPa .

Tow vessels will be used to assist with towing and positioning the JUR to a new location, they will not be in the OA at any other time. Support vessels are not used alongside the JUR while it is being towed or positioned. Tow vessels engaged in towing do not utilise DP in routine tow operations. Cumulative noise effects from towing vessels and support vessel is not credible as these operations do not occur concurrently.

6.4.1.3 Geotechnical investigations

Erbe and McPherson (2017) measured radiated noise levels from marine geotechnical drilling and standard penetration testing (SPT) from a jack-up rig situated in 7-13 m of water at the Port of Geraldton and at James Price Point, WA in 2010. The broadband (30 Hz–2 kHz) drilling source levels ranged from 142 to 145 dB re 1 μPa @ 1 m and the broadband (20 Hz–24 kHz) SPT source levels ranged from 151 to 160 dB re 1 $\mu\text{Pa}^2\text{s}$ @ 1 m at both locations (equivalent to approximately 160 – 170 dB re 1 μPa SPL at 1 m), with received levels reducing to approximately 141 to 146 dB re 1 μPa SPL within 20 m distance from the source (Erbe and McPherson, 2017). These source levels are lower than those typically generated by vessels under DP, as noted in the previous section, and tens of decibels lower than those used in marine noise regulations (Erbe & McPherson, 2017).

Based on these results, it is not credible that sound generated from geotechnical operations would add to sound levels emanating from louder sources of sound, most notably the support vessel. As such, the geotechnical investigations will not add to cumulative sound fields to any discernible extent and is therefore not assessed further in this EP.

6.4.1.4 ROV

In recognition that there is little information about the acoustic signatures of ROV and other subsea vehicles, (Stimpert, Brijonnay, Madrigal, Wakefield, & Yoklavich, 2019) reported on a study undertaken to investigate the sound generated by an ROV. A continuously recording passive acoustic monitor was attached to a stationary surveillance platform in rocky habitat off southern California (120 m water depth) and collected data over six days in October 2016 during which ROV activity was underway. Baseline ambient underwater noise in the area during the time of the experiment was estimated at 99 +/-3 dB re 1 µPa RMS (50–500 Hz) with calm sea and wind conditions. This level of sound is below that which could cause behavioural effects on marine fauna.

Based on the results of (Stimpert, Brijonnay, Madrigal, Wakefield, & Yoklavich, 2019), sound emanating from the AUV will have negligible impacts on marine mammals and fish, so it is not credible that sound generated from ROV operations in the water column or at the seabed would add to contribute to underwater sound levels to any discernible extent and is therefore not assessed further in this EP.

6.4.1.5 ROV cutter tool

The surface casings will be cut at or below the seabed to enable wellhead recovery, which is generally done using mechanical cutters (hardened metal knives) within the casing. A diamond wire saw operated via a ROV is the contingency plan in the event the mechanical cutters are unsuccessful.

Underwater sound measurement data during an underwater diamond wire cutting of a 32-inch conductor (10 m above seabed in approximately 80 m depth) found that the sound radiated was not easily discernible above the background noise at the closest recorder located 100 m from the source and was primarily detectable at higher acoustic frequencies (above around 5 kHz) which is above the hearing range of low frequency cetaceans (LFC) (Pangerc, Robinson, Theobald, & Galley, 2016). In another study, the United States Navy measured underwater sound levels when a diamond wire saw was cutting caissons for replacing piles. They reported an average SPL for a single diamond wire cutter at 136.1 to 141.4 decibels SPL at 10 m (Fairweather Science LLC, 2019). This measurement was back-propagated using spherical spreading ($20\log_{10}(R)$) to estimate the broadband ESL for the cutter of 161.3 dB re 1 µPa²m²s (Muellenmeister et al., 2023).

Based on the results of these three studies, it is not credible that sound generated from ROV cutting operations at the seabed would add significantly to sound levels emanating from louder sources of sound, most notably the support vessel. As such, the cutting process will not add to cumulative sound levels to any discernible extent and is therefore not assessed further in this EP.

6.4.1.6 Helicopters

Helicopters will be used to transport personnel and freight to the JUR, anticipated to be once every weekday. Helicopter operations produce strong underwater sounds for brief periods when the helicopter is directly overhead (Richardson, Greene, Malme, & Thomson, 1995). The received sound level underwater depends on the helicopter altitude and lateral distance, from the receiver depth and water depth.

Sound emitted from helicopter operations is typically below 500 Hz and sound pressure is greatest at surface in the water directly below a helicopter, but this diminishes quickly with depth. A helicopter can usually be heard in the air well before and after the brief period it passes overhead and is heard underwater. Reports show figures for a Bell 214 helicopter (stated to be one of the noisiest) being audible in the air for four minutes before it passed over underwater hydrophones, and detectable underwater for 38 seconds at three metres depth and 11 seconds at 18 metres depth (Richardson, Greene, Malme, & Thomson, 1995). Noise from helicopter activities is therefore localised and infrequent.

Given this short duration of underwater detection and the limited number of flights each week, helicopter noise is not considered to be significant in contributing to potential impacts to marine fauna and is not considered to contribute to cumulative impacts of noise sources, and is therefore not assessed further in this EP.

6.4.1.7 Subsea positioning equipment

Subsea positioning equipment consists of a number of transducers and receivers positioned on the subsea infrastructure and the JUR. Subsea positioning systems typically emit short pulses of medium to high frequency sound, normally within the range of 15 to 40 kHz. The estimated SPL would be 180 to 206 dB re 1 μ Pa at 1 m (Jiménez-Arranz et al, 2020. Transmissions are not continuous but consist of short 'chirps' with a duration that ranges from 3 to 40 milliseconds. Transponders will not emit any sound when on standby (Jiménez-Arranz et al, 2020).

The distances to SPL isopleths for a comparable USBL system in open water calculated the distance to 160 dB re 1 μ Pa (SPL)¹ to be 36 m (Austin, Warner, & McCrodan, 2012). As the distance to behavioural effects for cetaceans from subsea positioning equipment is so small, it is not assessed further in this EP (impulsive sound from conductor pile driving addresses impacts in detail).

6.4.1.8 Conductor driving

Conductor driving activities include the installation of 20 inch (508mm) and 26 inch (660mm) well conductors at the Marlin B platform. It is estimated up to six conductors will be installed. The conductors will be installed using a hydraulic pile driving hammer or the existing crane on the platform. Modelling commissioned by Esso for the conductor driving (see Section 6.4.3) indicates the following broadband SEL levels at each of the modelled pile penetration depths at a horizontal range of 10m:

- At 15.3 m penetration depth – 165.5 dB re 1 μ Pa²s
- At 40.0 m penetration depth – 165.0 dB re 1 μ Pa²s
- At 64.7 m penetration depth – 167.1 dB re 1 μ Pa²s.

The modelling results and the impact assessment is provided in Section 6.4.3.

6.4.1.9 Existing Esso operations

The activity will be conducted in the same space and time as existing Esso platform and pipeline operations, with the JUR to physically work over (i.e., on top of) two monotowers (Dolphin and Perch, both of which are non-operational), two platforms (Bream B [non-operational] and Marlin B) and five non-producing subsea exploration wells (Mulloway-1, Whiptail-1, Halibut-1, Marlin-1 and East Pilchard-1).

The operational facilities generate low levels of noise. As outlined in Esso's Bass Strait Operations EP (Volume 2, Table 6-1), platform-generated noise reduces to ambient underwater sound levels (120 dB RMS) within 130 m of the platform, indicating that impacts will be highly localised (Esso, 2019; Richardson, Greene, Malme, & Thomson, 1995). Platform generated noise will be continuous throughout the life of the platform (Esso, 2019). Impacts are highly localised and will not result in a permanent change to ambient noise levels following completion of operations, therefore impacts will have no adverse effects (Esso, 2019). The combination of two or more sources of noise (e.g. platform operations, JUR and support vessels) will increase sound levels, though this is expected to be marginal, generally a few decibels. Cumulative underwater sound impacts associated with existing Esso operations are expected to be negligible, with noise generated by the support vessel expected to be the dominant sound source. Therefore, cumulative sound impacts are not assessed in this EP.

6.4.2 Impacts of sound emissions

The impacts and risks resulting from underwater sound are generally well understood with regard to potential mortality and/or physiological injury for species in the water column, however, uncertainty lies in understanding the spatial and temporal extents of behavioural disturbances and the potential effects on populations and requires the application of context-specific information. The potential environmental impacts to marine fauna from high levels of underwater sound are:

- physical injury to auditory tissues or other air-filled organs

¹ 160 dB re 1 μ Pa (SPL) is the behavioural threshold for marine mammals for impulsive sounds.

- hearing impairment:
 - temporary threshold shift (TTS) – the temporary loss of hearing sensitivity caused by excessive noise exposure, or
 - permanent threshold shift (PTS) – a permanent loss of hearing sensitivity caused by excessive noise exposure, considered an auditory injury
- direct behavioural effects through disturbance or displacement, and consequent disruption of natural behaviours or processes (e.g. foraging, migration, resting, calving or spawning), and
- indirect behavioural effects by impairing/masking the ability to navigate, find food or communicate, or by affecting the distribution or abundance of prey species.

Specifically, underwater sound from the activity has the potential to adversely affect the following environmental values and sensitivities within and in the vicinity of the activity area, to varying degrees:

- plankton (including commercially important fish larvae/eggs)
- marine invertebrate assemblages
- fish:
 - mobile pelagic and demersal species that are likely to move away as sound levels increase
 - site-attached/dependent fish species associated with reef habitats. These species are less likely to move away and are expected to seek shelter within reef areas where present.
- cetaceans:
 - Foraging, migrating and transient whales known to occur in the region (e.g. PBWs and SRWs)
 - Dolphin species (e.g. bottlenose dolphin, common dolphin)
- pinnipeds - foraging habitat;
- foraging habitat for seabirds, and
- target species for commercially important fisheries.

6.4.2.1 JUR

Esso commissioned JASCO Applied Sciences (Matthews, Connell, & McPherson, 2022 Appendix J) to undertake underwater sound modelling for various scenarios in Bass Strait, two of which included a drilling campaign from a JUR, an attendant support vessel and a supply vessel. In these scenarios, the support vessel is assumed to be keeping station within a nominal 2 km × 4 km box, just outside the 500 m PSZ around the JUR. The results of the study predict that for marine mammals, the distance to the TTS threshold extends to 245 m from the JUR for LFC and 30 m for HFC, while PTS is not triggered.

Based on this information, and using marine mammals as the most sound-sensitive marine fauna, the EMBA's for underwater sound from a JUR are:

- Behavioural threshold – 1.4 km
- TTS – 245 m
- PTS – not triggered.

6.4.2.2 Support vessels

McCauley (1998) measured underwater broadband noise of up to 182dB re 1 µPa at 1m from support vessels when holding position using DP alongside a drill rig, with levels decreasing by around 34dB within 50m, and dropping to around 120dB re 1 µPa at approximately 3-5 km from the source, depending on water depth, seabed composition and other factors.

Under normal operating conditions when the vessel is idling or moving between sites, vessel noise would be detectable over only a short distance. For example, Woodside (2003) found that vessel noise levels rarely (<1% of the time) exceeded a threshold of 120dB re 1µPa (i.e., generally less than ambient underwater sound intensity) (Esso, 2019; Richardson, Greene, Malme, & Thomson, 1995) from an acoustic monitoring site 5.1km from the source when a drilling support vessel was holding position using DP bow thrusters.

Esso commissioned JASCO Applied Sciences (Matthews, Connell, & McPherson, 2022) (Appendix J) to undertake underwater sound modelling for various scenarios in Bass Strait, as outlined in the sub-section above, and the

same TTS and PTS results apply to the support vessels as they do to the JUR. However, with regard to behavioural response, with a support vessel closest to the JUR and using DP thrusters, the greatest distances to the behavioural threshold for marine mammals was predicted to be 5.62km. Note the only time a support vessel will be using DP thrusters is when it is alongside the JUR to undertake unloading/loading activities. This is expected to be two to three time per week.

Based on this information, and using marine mammals as the most sound-sensitive marine fauna, the EMBA's for underwater sound from a support vessel are:

- Behavioural threshold – 5.6km (when support vessel is alongside JUR using DP thrusters only)
- TTS – 245m
- PTS – not triggered.

6.4.2.3 Conductor driving

Esso commissioned JASCO Applied Sciences (Australia) Pty Ltd (JASCO) to undertake a modelling study of impulsive underwater sound emissions from conductor driving at Marlin B for this activity (Connell, Koessler, & McPherson, 2023).

The underwater sound EMBA is the geographical area where noise levels are predicted to be above the relevant worst-case underwater noise thresholds.

Advice from underwater sound acoustic experts at JASCO Applied Science is that sound generated by the conductor driving at Marlin B will be the loudest source of impulsive sound for the conductor driving activity. As such, underwater sound modelling for conductor driving at Marlin B (impulsive sound) has been conducted to represent the worst-case scenario for underwater sound, despite the activity having a short duration of 15-30 days out of the 12-16-month activity duration. Other sources of underwater sound that are predominantly continuous sound sources from routine marine activities, described in previous sections, can be assessed using existing scientific literature, whereas the impact assessment for conductor pile driving is strongly influenced by project-specific engineering, water depth and seabed type, thereby making modelling essential to undertake an accurate impact assessment.

The results of the conductor driving (impulsive noise) predict that the largest distances to underwater noise thresholds are:

- behavioural response threshold (cetaceans): 450m for SPL
- TTS for LFCs: not reached for peak pressure level (PK), and 2.93km for SEL_{24hr}
- PTS for LFCs: not reached for PK, and 670m for SEL_{24hr}.

Specific impact thresholds for each species and/or hearing group are described in Section 6.4.2.1.

6.4.2.4 Other sound sources

Other sources of sound for this activity (geotechnical activities, ROV, ROV cutting tool, helicopters and USBL transponders) will result in small EMBA's. Table 6-16 summarises the EMBA's, with the largest EMBA for continuous sound coming from the support vessel, and the largest EMBA for impulsive sound coming from conductor pile driving. As such, these other sources of sound are not assessed further in the EP.

Table 6-16 Summary of underwater sound EMBA's

Sound source	Sound type	EMBA
JUR	Continuous	Behaviour: 1.4 km
Support vessels when alongside JUR using DP thrusters	Continuous	Behaviour: 5.6 km TTS: <50m
Conductor pile driving (Marlin B only)	Impulsive	Behaviour: 450 m TTS: 2.93 km (SEL _{24h})

Sound source	Sound type	EMBA
		PTS: 670 m (SEL _{24h})
Geotechnical investigations (Bream-B location only, contingency only)	Impulsive	Expected to be less than the support vessel
ROV	Continuous	Expected to be tens of metres
ROV cutting tool (wellhead cutting and removal)	Continuous	Expected to be tens of metres
Helicopters	Continuous	Expected to be tens of metres
Subsea positioning equipment (USBL transponders)	Impulsive	Expected to be tens of metres

6.4.3 Impact assessment – Conductor Driving only

Underwater sound modelling predicts the distances from operations at which underwater sound levels reach noise effect thresholds and criteria. 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 corresponding marine mammal thresholds include levels associated with behavioural response, PTS and TTS. The marine mammal functional hearing groups considered were low-, high- and very high-frequency cetaceans and otariid seals.

JASCO performed a modelling study of underwater sound levels associated with the impact piling of a conductor casing at the Marlin B platform (Connell, Koessler, & McPherson, 2023 Appendix K). JASCO modelled an IHC S-150 impact hammer for use with driving a single conductor pile at one location. Estimated underwater acoustic levels were presented as sound pressure levels (SPL, L_p); zero-to-peak pressure levels (PK, L_{pk}), and either single-strike (i.e. per-strike) or accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria and noise sources. The duration period for SEL accumulation was defined as a 24-hour period over which sound energy is integrated; the level is specified with the abbreviation SEL_{24h}.

The total noise exposure (SEL) depends on the total number of hammer strikes required to drive the pile. The drivability logs estimated that it would take approximately 5,956 strikes (2.3 hours driving at 46 strikes per minute) to drive the piles 77 m into the substrate with a 150 kJ hammer.

6.4.3.1 Noise effect criteria

The following thresholds and guidelines were chosen because they represent the best available science, and sound levels presented in literature for fauna with no defined thresholds:

1. Marine mammals (Table 6-17):
 - a. Peak pressure levels (PK; L_{pk}) and frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Southall et al (2019 for the onset of PTS and TTS in marine mammals for impulsive sources.
 - b. Marine mammal behavioural thresholds based on the current interim U.S. National Oceanic and Atmospheric Administration (NOAA, 2019 unweighted criterion for marine mammals of 160 dB re 1 μ Pa (SPL; L_p) for impulsive sound sources.
2. Fish, fish eggs, and larvae (Table 6-18):
 - a. Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014).
3. Sea turtles (Table 6-19):
 - a. Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) (Finneran, et al., for the onset of PTS and TTS in turtles for non-impulsive and impulsive sound sources.

- b. Sea turtle behavioural response threshold of 166 dB re 1 µPa (SPL; L_p) for impulsive noise, along with a sound level associated with behavioural disturbance 175 dB re 1 µPa (SPL; L_p) (McCauley, et al., .

Table 6-17 Acoustic effects of impulsive noise on marine mammals: thresholds.

Hearing group	(NOAA, 2019)	(Southall, et al., 2019)			
	Behaviour	PTS onset thresholds* (received level)		TTS onset thresholds* (received level)	
	SPL (L_p ; dB re 1 µPa)	Weighted SEL _{24h} (LE,24h; dB re 1 µPa ² -s)	PK (L_{pk} ; dB re 1 µPa)	Weighted SEL _{24h} (LE,24h; dB re 1 µPa ² -s)	PK (L_{pk} ; dB re 1 µPa)
LFC	160	183	219	168	213
High-frequency cetaceans (HFC)		185	230	170	224
Very-high-frequency cetaceans (VHFC)		155	202	140	196
Otarid seals (in water)		203	232	188	226

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset.

L_p denotes sound pressure level and has a reference value of 1 µPa.

L_{pk} denotes peak sound pressure is flat weighted or unweighted and has a reference value of 1 µPa.

$L_{E,24h}$ denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²-s.

Table 6-18 Criteria for pile driving 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)	> 219 dB SEL _{24h} or > 213 dB PK	> 216 dB SEL _{24h} or > 213 dB PK	>> 186 dB SEL _{24h}	(N) Moderate (I, F) Low	(N) High (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	210 dB SEL _{24h} or > 207 dB PK	203 dB SEL _{24h} or > 207 dB PK	>> 186 dB SEL _{24h}	(N) Moderate (I, F) Low	(N) High (I) Moderate (F) Low
Fish: Swim bladder involved in hearing (primarily)	207 dB SEL _{24h} or > 207 dB PK	203 dB SEL _{24h} or > 207 dB PK	186 dB SEL _{24h}	(N, I) High (F) Moderate	(N, I) High (F) Moderate

Type of animal	Mortality and potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
pressure detection)					
Fish eggs and fish larvae	> 210 dB SEL _{24h} or > 207 dB PK	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Moderate (I, F) Low	(N) Moderate (I, F) Low

Peak sound pressure level: dB re 1 µPa; SEL_{24h} dB re 1µPa²·s.

All criteria are presented as sound pressure even for fish without swim bladders since no data for particle motion exist.

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I), and far (F).

Table 6-19 Acoustic effects of impulsive noise on sea turtles: thresholds

Effect type	Criterion	SPL (L _p ; dB re 1 µPa)	Weighted SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	PK (L _{pk} ; dB re 1 µPa)
Behavioural response	(McCauley, et al., 2000)	166	NA	
Behavioural disturbance		175		
PTS onset thresholds ¹ (received level)	(Finneran, et al., 2017)	NA	204	232
TTS onset thresholds ¹ (received level)			189	226

Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS and TTS onset.

L_p denotes sound pressure level and has a reference value of 1 µPa.

L_{pk} denotes peak sound pressure is flat weighted or unweighted and has a reference value of 1 µPa.

L_{E,24h} denotes cumulative sound exposure over a 24 h period and has a reference value of 1 µPa²·s.

6.4.3.2 Modelling results

This section presents the per-strike sound fields in terms of maximum-over-depth SPL, SEL, and PK. The different metrics are presented for the following reasons:

- SPL sound fields (Table 6-20) were used to determine the distances to marine mammal and turtle behavioural thresholds
- SEL sound fields (Table 6-21) are used as inputs into the 24 h SEL scenario
- PK metrics within the water column (Table 6-22) are relevant to thresholds and guidelines for marine mammals, sea turtles, fish, fish eggs and larvae.

Frequency-weighted SEL_{24h} sound fields were used to estimate the maximum distance and the area (R_{max} %) to marine mammals and turtle PTS and TTS thresholds (Table 6-23), and to estimate maximum distance and the area to injury and TTS guidelines for fish (Table 6-24).

Table 6-20 Modelled maximum-over-depth per-strike SPL isopleths

SPL (Lp; dB re 1 µPa)	Penetration depth					
	15.3 m		40.0 m		64.7 m	
	R _{max} (km)	R _{95%} (km)	R _{max} (km)	R _{95%} (km)	R _{max} (km)	R _{95%} (km)
200	-	-	-	-	-	-
190	-	-	-	-	-	-
180	-	-	-	-	-	-
175 ¹	-	-	-	-	-	-
170	0.05	0.05	0.05	0.05	0.09	0.09
166 ²	0.12	0.12	0.12	0.11	0.15	0.15
160 ³	0.32	0.31	0.31	0.30	0.45	0.44
150	1.15	1.06	1.04	1.01	1.57	1.40
140	3.03	2.77	2.91	2.66	3.42	3.15
130	5.26	4.86	5.04	4.74	5.80	5.40

¹ Threshold for turtle behavioural disturbance from impulsive noise (McCauley, et al., 2000).

² Threshold for turtle behavioural response to impulsive noise (McCauley, et al., 2000).

³ Marine mammal behavioural threshold for impulsive sound sources (NOAA, 2019).

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

Table 6-21 Modelled maximum-over-depth per-strike SEL isopleths

Per-strike SEL (LE; dB re 1 µPa2·s)	Penetration depth (m)					
	15.3 m		40.0 m		64.7 m	
	R _{max} (km)	R _{95%} (km)	R _{max} (km)	R _{95%} (km)	R _{max} (km)	R _{95%} (km)
190	-	-	-	-	-	-
180	-	-	-	-	-	-
170	-	-	-	-	-	-
162 ¹	0.04	0.04	0.02	0.02	0.06	0.06
160	0.07	0.07	0.06	0.06	0.11	0.10
150	0.34	0.33	0.33	0.32	0.49	0.48

Per-strike SEL (LE; dB re 1 µPa ² ·s)	Penetration depth (m)					
	15.3 m		40.0 m		64.7 m	
	Rmax (km)	R95% (km)	Rmax (km)	R95% (km)	Rmax (km)	R95% (km)
140	1.41	1.22	1.28	1.12	1.75	1.57
130	3.29	3.03	3.17	2.91	3.77	3.47

¹ Startle response level for squid (Fewtrell & McCauley, 2012).

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

Table 6-22 Maximum horizontal distances from the pile to modelled maximum-over-depth PK thresholds

Hearing group	PK threshold (L _{pk} ; dB re 1 µPa)	Penetration depth (m)		
		15.3	40	64.7
		Rmax (km)	Rmax (km)	Rmax (km)
PTS				
LFCs	219	-	-	-
HFCs	230	-	-	-
VHFCs	202	-	-	-
Sea turtles	232	-	-	-
TTS				
LFCs	213	-	-	-
HFCs	224	-	-	-
VHFCs	196	-	-	-
Sea turtles	226	-	-	-
Fish I (also applied to sharks)	213	-	-	-
Fish II, III Fish eggs, and larvae	207	-	-	-

Fish I–No swim bladder; Fish II–Swim bladder not involved with hearing; Fish III–Swim bladder involved with hearing.

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

Table 6-23 Maximum-over-depth distances to frequency-weighted 24- h sound exposure level

Fauna group	Threshold for SEL _{24h} (LE,24h; dB re 1 µPa ² ·s)	Conductor pile	
		R _{max} (km)	Area (km ²)
PTS			
LFC	183	0.67	1.25
HFC	185	–	–
VHFC	155	0.08	0.02
Sea turtles	203	–	–
TTS			
LFC	168	2.93	24.6
HFC	170	–	–
VHFC	140	1.02	2.81
Sea turtles	188	–	–

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

Table 6-24 Distances to 24-hour sound exposure level based fish criteria in the water column

Marine fauna group	Threshold for SEL _{24h} (LE,24h; dB re 1 µPa ² ·s)	Conductor pile	
		R _{max} (km)	Area (km ²)
Fish I	219	–	–
Fish II, fish eggs and fish larvae	210	–	–
Fish III	207	–	–
Recoverable injury			
Fish I	216	–	–
Fish II, III	203	–	–
TTS			
Fish I, II, III	186	0.63	0.85

Fish I–No swim bladder; Fish II–Swim bladder not involved with hearing; Fish III–Swim bladder involved with hearing.

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

6.4.3.3 Impacts to Marine fauna

PLANKTON

Plankton is widely dispersed throughout the ocean and are transported by prevailing wind and tide- driven currents. They cannot take evasive behaviour to avoid anthropogenic sound sources. However, the potential for impacts is limited due to their widespread distribution and rapid population growth rates.

Conductor driving at the maximum penetration depth of 64.7m had sound levels at 167.1 SEL 24h (1 $\mu\text{Pa}^2\cdot\text{s}$), which did not exceed the criteria for impulsive sound at 210 SEL_{24h} (Table 6-18). Plankton had shown mortality and potential mortal injury when PK levels exceeded 207 dB re 1 μPa (Table 6-18) (Popper, et al., 2014), however the results from the JASCO modelling have shown the maximum PK levels would not exceed 207 dB re 1 μPa (Table 6-22). Based on this evaluation, the impact consequence for plankton resulting from underwater noise generated by conductor driving is assessed as a consequence level of IV at an ecosystem and population level.

FISH

The effects of underwater sound on fish are expected to be limited to behavioural responses within several thousand metres of the Marlin B Platform.

Physiological impacts

All fish studied to date are able to detect sound, with the main auditory organs in teleost (bony) fish being the otolithic organs of the inner ear (Carroll, Przeslawski, Duncan, Gunning, & Bruce, 2017). Hearing in fish primarily involves the ability to sense acoustic particle motion via direct inertial stimulation of the otolithic organs or their equivalent. Many species also have the ability to sense sound pressure using an indirect path of sound stimulation involving gas-filled chambers such as the swim bladder (Carroll, Przeslawski, Duncan, Gunning, & Bruce, 2017).

Based on the modelling results in Table 6-22, it is expected that impacts to fish and sharks from conductor driving will be highly localised and have no lasting effect, with the main impact being temporary behavioural changes (avoidance) for those individuals that are close to Marlin B Platform at the time of the activity.

The physiological impacts to fish are assessed as a consequence level of IV, as fish will not have a prolonged exposure to sound emissions from this activity.

Behavioural impacts

Behavioural impacts to fish species are considered to be localised and temporary, with displacement of pelagic or migratory fish populations having insignificant repercussions at a population level (McCauley R. , 1994). Behavioural changes such as startle or alarm responses are expected to be localised and temporary, with displacement of pelagic or migratory fish likely to have insignificant repercussions at a population level (McCauley R. , 1994) (Popper, et al., 2015).

Limited research has been conducted on responses from elasmobranchs (sharks and rays, including juveniles) to underwater sound. This may be because sharks and rays differ from bony fish in that they have no accessory organs of hearing (i.e., a swim bladder) and therefore are unlikely to respond to acoustic pressure (Myrberg JR., 2001). Elasmobranchs sense sound via the inner ear and organs and as they lack a swim bladder it is thought that they are only capable of detecting the particle motion component of acoustic stimuli (Myrberg, 2001).

Fish behaviours are highly impacted within tens of metres to the sound source (Table 6-18). In this instance, conductor driving would produce a maximum 187 dB re 1 $\mu\text{Pa}^2\cdot\text{s}$ (Connell, Koessler, & McPherson, 2023), which may temporarily displace fish as they tend to avoid sound sources greater than 90 dB (Nedwell, et al., 2007). This activity will not permanently change fish behaviour as conductor driving will occur for a short period of time and fish are expected to behave normally once noise has ceased (Ruggerone, Goodman, & Miner, 2008). Therefore, the impact of conductor driving to fish behaviour is assessed as a consequence level IV.

TURTLES

Three EPBC Act-listed species of turtle may occur with the activity area (see Appendix B).

Morphology

Morphological studies of green and loggerhead turtles (Ridgeway, Wever, McCormick, Palin, & Anderson, 1969) (Wever, 1978) (Lenhardt, Klinger, & Musick, 1985) found that the marine turtle ear is similar to other reptiles but

has some adaptations for underwater listening. A thick layer of fat may conduct sound to the ear in a similar manner as the fat in jawbones of odontocetes (Ketten et al., 1999), but marine turtles also retain an air cavity that presumably increases sensitivity to sound pressure. Sea turtles have lower underwater hearing thresholds than those in air, owing to resonance of the middle ear cavity, and hence they hear best underwater (Willis, 2016).

Electrophysiological and behavioural studies on green and loggerhead turtles found their hearing frequency range to be approximately 50–2,000 Hz, with highest sensitivity to sounds between 200 and 400 Hz (Ridgeway, Wever, McCormick, Palin, & Anderson, 1969) (Bartol, Musick, & Lenhardt, 1999) (Ketten & Bartol, 2005) (Yudhana, Sunardi, Abdullah, & Hassan, 2010) (Piniak W. , Mann, Eckert, & Harms, 2011) (Lavender, Bartol, & Bartol, 2012) (Lavender, Bartol, & Bartol, 2014), although these studies were all conducted in-air. Underwater audiograms are only available for three species. One of these species, the loggerhead turtle (Martin, et al., 2012), demonstrated higher sensitivity at around 500 Hz (Willis, 2016). Recent work on green turtles has refined their maximum underwater sensitivity to be between 200 and 400 Hz (Piniak W. , Mann, Harms, Jones, & Eckert, 2016).

At very close distances to a sounds source, there is also the possibility of temporary hearing impairment or perhaps even permanent hearing damage to turtles. The greatest impact is likely to occur if sound pulses are generated in or near areas where turtles congregate, and in seasons when turtles are concentrated in these areas.

McCauley et. al (2000) found that the threshold for behavioural response, TTS and PTS for turtles to impulsive noise was not met for any sound greater than 175 dB re 1 μ Pa (see Table 6-20). It was found that behavioural response for turtles would begin at 166 dB re 1 μ Pa (see Table 6-19), which may occur within 120m to the Marlin-B platform (see Table 6-20). However, the combination of the rare occurrence of turtles and the absence of turtle BIAs, nesting beaches or habitat critical to turtle species in Bass Strait, means that physiological and behavioural impacts to turtles from underwater sound associated with the activity is assessed as a consequence level of IV.

MARINE MAMMALS

Marine mammal species share basic hearing anatomy and physiology with their terrestrial ancestors but have broader hearing frequency ranges due to the much higher sound speed underwater compared to in air. Odontocetes (toothed whales and dolphins) hear best at higher frequencies, generally in the ultra-sonic range (>20,000 Hz), with no responsive hearing below 500 Hz (0.5 kHz). Mysticetes (baleen whales, such as humpback, blue and SRW) hear better at lower frequencies (Wartzok & Ketten, 1999 (Mooney, Yamato, & Branstetter, 2012, generally at infrasonic frequencies as low as 10–15 Hz (APPEA, 2004). The optimal hearing frequency range for baleen whales is between ~20 and 1,000 Hz (McCauley R. , 1994).

Sound is very important to whales and dolphins for effective hunting, navigation and communication. For example, mysticetes communicate at low frequencies (20 Hz to approximately 5 kHz) using predominantly tonal type calls. Odontocetes communicate using both tonal signals (up to approximately 30 kHz) and echolocation clicks (peak frequencies range from approximately 40 – 130 kHz), which they also use for hunting and navigation (Au, Popper, & Ray, 2000).

Physiological impacts

Physiological impacts such as physical damage to the auditory apparatus (e.g., loss of hair cells or permanently fatigued hair cell receptors), can occur in marine mammals when they are exposed to intense or moderately intense sound levels and could cause permanent or temporary loss of hearing sensitivity. This is not expected to occur as a result of the proposed conductor driving, for the reasons outlined herein.

A TTS is hearing loss from which an animal recovers, usually within a day at most, whereas PTS is hearing loss from which an animal does not recover (permanent hair cell or receptor damage). TTS occurs at lower exposure levels than PTS. The cumulative effects of repeated TTS, especially if the animal receives another sound exposure near or above the TTS threshold before recovering from the previous sensitivity shift, could cause PTS. If the sound is intense enough, an animal could succumb to PTS without first experiencing TTS (Weilgart, 2007).. While there are results from TTS and PTS studies on odontocetes exposed to impulsive sounds (Finneran, 2016) is no data for mysticetes.

Behavioural impacts

Underwater sound may have non-physiological (i.e., behavioural) effects on cetaceans including:

- Increased stress levels

- Disruption to underwater acoustic cues
- Masking
- Behavioural changes
- Displacement.

These aspects are discussed further in this section.

Behavioural responses to underwater sound are difficult to determine because animals vary widely in their response type and strength, and the same species exposed to the same sound may react differently (Nowacek, Johnson, & Tyack, 2004) (Gomex, et al., 2016) (Southall, Nowacek, Miller, & Tyack, 2016). An individual’s response to a stimulus is influenced by the context in which the animal receives the stimulus and how relevant the individual perceives the stimulus to be. A number of biological and environmental factors can affect an animal’s response—behavioural state (e.g., foraging, travelling or socialising), reproductive state (e.g., female with or without calf, or single male), age (juvenile, sub-adult, adult), and motivational state (e.g., hunger, fear of predation, courtship) at the time of exposure as well as perceived proximity, motion and biological meaning of the sound and nature of the sound source.

Animals might temporarily avoid anthropogenic sounds but could display other behaviours such as approaching novel sound sources, increasing vigilance, hiding and/or retreating, that might decrease their foraging time (Purser & Radford, 2011). Some cetaceans might also respond acoustically in a range of ways, including by increasing the amplitude of their calls (Lombard effect), changing their spectral (frequency content) or temporal vocalisation properties, and in some cases, cease vocalising (McDonald, Hildebrand, & Webb, 1995) (Parks, Clark, & Tyack, 2007) (Di Lorio & W., 2010) (Castellote, Clark, & Lammers, 2012) (Hotchkyn & Parks, 2013) (Blackwell, et al., 2015). Masking can also occur (Erbe, Reichmuth, Cunningham, Lucke, & Dooling, 2015).

The EPBC Act Protected Matters Search Tool Reports (PMST) for the ADE (Appendix C) found that five species of threatened cetaceans are likely to, or known to occur within the ADE (which includes the Marlin B platform):

- Blue whale (endangered)
- PBW (endangered)
- SRW (endangered)
- Fin whale (vulnerable)
- Sei whale (vulnerable).

These whales are also listed as migratory and are classified as LFCs with respect to the assessment of underwater noise impacts. There are also a number of listed migratory whales reported within the ADE (Table 6-25) as well as a number of other species listed as cetaceans and/or marine species (including dolphins and seals).

Table 6-25 Listed migratory whales reported within the ADE

Species	Presence	Hearing group
Pygmy right whale	Foraging, feeding or related behaviour likely to occur within area	LFC
Humpback whale	Species or species habitat known to occur within area	LFC
Bryde's whale	Species or species habitat may occur within area	LFC
Antarctic minke whale	Species or species habitat likely to occur within area	LFC
Sperm whale	Species or species habitat may occur within area	HFC
Killer whale, orca	Species or species habitat likely to occur within area	HFC
Dusky dolphin	Species or species habitat likely to occur within area	HFC

SEALS

Both the Australian and New Zealand fur seals may occur within the ADE. The otariid seal (Australian and New Zealand fur seals and Australian sea lion) PTS and TTS criteria were not reached within the limits of the modelled resolution (20 m).

Impacts are predicted to be temporary avoidance of the immediate area of the activity. The consequence level is assessed as IV from underwater sound on seals, as there are no biologically important behaviours, BIAs, aggregation areas or haul-out areas identified within the ADE.

HIGH FREQUENCY CETACEANS

Neither the HFC PTS or TTS criteria were reached within the limits of the modelled resolution (20 m). The PMST report for the activity area identified a number of migratory species (Table 6-25), several dolphin species, beaked and toothed whales, however, no BIAs or behaviours were identified within the ADE and therefore they are not assessed further.

Impacts are predicted to be temporary avoidance of the immediate area of the activity. The consequence level is assessed as III as there are no biologically important behaviours or BIAs identified within the ADE.

LOW FREQUENCY CETACEANS

BIAs for PBW (known foraging area, foraging (annual high use area) and SRW (migration and reproduction) occur within the wider region. Both the OAs and the behavioural EMBA overlap the foraging (annual high use area) BIA for PBWs and the migration BIA for SRWs.

The furthest distance to the PTS criteria is 670 m and the furthest distance to the TTS criteria is 2.93 km. Only the behavioural threshold for LFC is triggered by conductor pile driving, with the distance to effect being 450 m.

The area affected by the behavioural threshold (0.64 km²) represents a small portion of the PBW foraging BIA (0.0003%). While TTS and PTS are not relevant because they are only triggered by the 24hr SEL, theoretically the area affected by TTS (26.9 km², being the largest area) represents a very small portion of the PBW foraging BIA (0.014%). Given these small spatial overlaps, if the activity has a temporal overlap with the presence and/or foraging of PBW, it is unlikely to result in behavioural changes that affect foraging.

For SRW, the area affected by the behavioural threshold does not reach the reproduction BIA, and represents a small portion of the migration BIA (0.00002%).

The consequence level is assessed as III for PBWs as there is potential for the temporary displacement of PBWs from a small area if they are present. The consequence level for SRW is also assessed in Section 6.4.5.2 against the National Recovery Plan for the Southern Right Whale (*Eubalaena australis*) (DCCEEW, 2024).

6.4.4 Impact assessment – continuous sound from support vessels

Support vessels typically emit low levels of sound from propeller cavitation (the dominant sound source), thrusters, hydrodynamic flow around the hull and from onboard machinery (Popper, et al., 2014). The support vessel will use DP to maintain position when it is alongside the JUR for loading/unloading operations; cavitation from the thrust propellers while in DP mode is a significant source of underwater sound. The JASCO modelling report included the representation of future drilling campaigns based upon a JUR with a support vessel, and focused on predicting impacts to marine mammals (Matthews, Connell, & McPherson, 2022 Appendix K).

Scenario 16 in Matthews, Connell and McPherson (2022) is a JUR drilling operation with a support vessel standing by in a nominal 2km × 4km box, 500m from the JUR. Scenario 17 in Matthews, Connell and McPherson (2022) adds a supply vessel alongside the JUR for periods of either 2 or 8 hours. For both scenarios, the modelling site is a generic location between the Barracouta and Kingfish B platforms in a water depth of 60m.

6.4.4.1 Noise effect criteria

The following thresholds and guidelines were chosen because they represent the best available science, and sound levels presented in literature for fauna with no defined thresholds:

1. Marine mammals (Table 6-26):

- Peak pressure levels (PK; L_{pk}) and frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Southall et. al. (2019) for the onset of PTS and TTS in marine mammals for non-impulsive sources.

- Fish, fish eggs, and larvae (Table 6-27):
 - Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014).
- Sea turtles:
 - Sound exposure guidelines for turtles (Popper, et al., 2014)(Table 6-27).
 - Threshold criteria for continuous noise on turtles2017)(Table 6-28).

Table 6-26 Criteria for effects of non-impulsive noise exposure, including vessel noise, for marine mammals: Unweighted SPL and SEL_{24h} thresholds

Hearing group	NOAA (2019)	Southall et al. (2019)	
	Behaviour	PTS onset thresholds (received level)	TTS onset thresholds (received level)
	SPL (L _p ; dB re 1 μ Pa)	Weighted SEL _{24hour} (L _{E,24h} ; dB re 1 μ Pa ² s)	Weighted SEL _{24hour} (L _{E,24h} ; dB re 1 μ Pa ² s)
Low-frequency cetaceans (LFC)	120	199	179
High-frequency cetaceans (HFC)		198	178
Pinnipeds (including otariids) in water		219	199

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset.

L_p denotes sound pressure level and has a reference value of 1μPa.

L_{pk} denotes peak sound pressure is flat weighted or unweighted and has a reference value of 1μPa.

L_{E,24h} denotes cumulative sound exposure over a 24h period and has a reference value of 1μPa²s.

Table 6-27 Criteria for continuous sound 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, I, F) Low	(N, I, F) Low	(N) Moderate (I, F) Low	(N, I) High (F) Moderate	(N, I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	(N, I, F) Low	(N, I, F) Low	(N) Moderate (I, F) Low	(N, I) High (F) Moderate	(N, I) Moderate (F) Low
Fish: Swim bladder involved in	(N, I, F) Low	170 dB rms for 48h	158 dB rms for 12h	(N, I, F) High	(N) High

Type of animal	Mortality and potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
hearing (primarily pressure detection)					(I) Moderate (F) Low
Fish eggs and fish larvae	(N, I, F) Low	(N, I, F) Low	(N, I, F) Low	(N) High (I) Moderate (F) Low	(N, I) Moderate (F) Low
Sea turtles	(N, I, F) Low	(N, I, F) Low	(N) Moderate (I, F) Low	(N, I) High (L) Moderate	(N) High (I) Moderate (L) Low

Rms sound pressure levels dB re 1 µPa.

All criteria are presented as sound pressure even for fish without swim bladders since no data for particle motion exist.

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I), and far (F).

Table 6-28 Acoustic effects of continuous noise on turtles, weighted SEL, Finneran et al. (2017)

PTS onset thresholds* (received level)	TTS onset thresholds* (received level)
220	200

* L_E denotes cumulative sound exposure over a 24 h and has a reference

The sound levels and frequency characteristics of underwater sound produced by vessels are related to vessel size and speed. When idle or moving at slow speed between investigation sites, vessels generally emit low-level noise.

Under normal operating conditions when the vessel is idling or moving between sites, vessel noise would be detectable over only a short distance. For example, Woodside (2003) found that vessel noise levels rarely (<1% of the time) exceeded a threshold of 120 dB re 1 µ Pa (i.e., slightly less than ambient underwater sound intensity in the activity area) from an acoustic monitoring site 5.1 km from the source when a drilling support vessel was holding position using DP bow thrusters. The behavioural threshold for non-impulsive sound for all cetaceans is 120 dB re 1uPa (based on NOAA, (2019)).

Injury (TTS and PTS) is very unlikely to occur in any marine species as a result of vessel operations. The sounds produced by the vessels during this activity will not be outside the range of other anthropogenic sound in the region, such as merchant shipping. Nevertheless, an assessment of the impacts of continuous sound from the support vessel on cetaceans is provided here using the EMBA based on the McCauley (1998) study described in Section 6.4.3 (TTS is <50 m and behavioural response is 5.6 km).

6.4.4.2 Modelling results

The results of JASCO Applied Sciences Australia Ltd (Matthews, Connell, & McPherson, 2022 Appendix J) predict distances to TTS of up to 245m around the JUR for LFC (8-hour scenario). This distance is only slightly influenced by the presence of a support vessel and does not change with the location of the support vessel.

CUMULATIVE SOUND FROM SUPPORT VESSELS

The JASCO report states that it would be computationally prohibitive to perform propagation modelling for every vessel position with an interval of 1 second over a period of 24 hours (Matthews, Connell, & McPherson, 2022) (Appendix J). Therefore, the vessel speed of 4 knots and the distance between consecutive vessel positions is small enough that the environmental parameters that influence sound propagation are virtually the same for many positions.

The distance to behavioural response threshold, however, is largely influenced by the location of the support vessel on DP in relation to the JUR. For the scenario most relevant to this activity (i.e. scenario 16 where the support vessel is attending the JUR), the distance to the behavioural threshold is 5.6km from the JUR as shown in Table 6-29.

Scenario 17 (as described in Section 6.4.4) is unlikely to occur as no more than one support vessel is present during JUR activities. It is considered a highly unlikely scenario that the JUR support vessel and a platform supply vessel will be within the same PSZ at the same time. This is because having two vessels in this restricted space presents significant safety risks. So while Scenario 17 in the Matthews, Connell and McPherson (2022) (Appendix J) modelling report indicates a behavioural distance to effect for LFC of 7.9km, in reality a situation in which this scenario presents itself is considered highly unlikely.

Table 6-29 All distances (in metres) are calculated from the centre of the platform

Effect thresholds			Scenario					
			16		17		17	
			JUR drilling with a support vessel standing by 500m from the JUR		JUR drilling with a supply vessel on DP alongside for 2 hours		JUR drilling with a supply vessel on DP alongside for 8 hours	
			R _{95%}	R _{max}	R _{95%}	R _{max}	R _{95%}	R _{max}
Injury	LFC	PTS	-	-	-	-	-	-
		TTS	210	215	210	225	230	245
	HFC	PTS	-	-	-	-	-	-
		TTS	-	-	-	-	30	30
	Pinnipeds in water	PTS	-	-	-	-	-	-
		TTS	-	-	-	-	-	-
Behavioural response	Support vessel closest to the JUR	4,860	5,510	5,020	5,620	5,020	5,620	
	Support vessel furthest from the JUR	6,595	7,660	6,740	7,935	6,740	7,935	

6.4.4.3 Marine fauna

Noise sources from drilling operations that are a continuous broadband (rather than impulsive sound such as piling) are related mostly to behavioural disturbances rather than injury or mortality.

PLANKTON

There is no data on mortality and potential mortal injury, impairment and behaviour on plankton (Popper, et al., 2014). Therefore, the guidelines provided in Popper et al. (2014) are considered for this activity (Table 6-27). There are low risks to plankton for impairment, behaviour, mortality and potential mortal injury. Based on this evaluation, the impact consequence for plankton resulting from underwater noise generated by support vessels has a consequence level of IV at an ecosystem and population level.

FISH

There is a small overlap of BIA with the ADE:

- White shark (*Carcharodon carcharias*) – 9.6% reproduction area

There is no direct evidence of mortality or potential mortality to fish from ship sound emissions. The risks of mortality and potential mortality, and recoverable injury impacts to fish with no swim bladder (sharks) or where the swim bladder is not involved in hearing is low and that TTS may be a moderate risk at near distances (tens of metres) from the vessel (2014).

Behavioural impacts to fish from the activity will be limited to behavioural responses within metres of the noise source. Fish (including sharks and rays) may be temporarily displaced from the immediate vicinity of the sound source. Because DP is unlikely to occur over a period of 12 hours, and pelagic fish are unlikely to remain static (i.e., they generally swim away from the sound source), it is not anticipated TTS will be reached during DP and therefore, impacts from continuous sound from DP are likely to be insignificant to fish. Therefore, the consequence level is assessed as IV.

White shark reproduction may occur in the ADE, as shown in the BIA (Figure 3-6). Additionally, they have highly localised and geographically discrete inshore nursery areas (CSIRO, 2021), which does not occur within the ADE. This, combined with the fact that sharks do not possess a swim bladder (and are therefore not susceptible to underwater sound), it is highly unlikely that sound from the support vessels will impact white sharks in Bass Strait. The consequence level is assessed as IV.

For fish with a swim bladder involved in hearing, the risks of mortality and potential mortality impacts are low. As the range for support vessels is expected to be a maximum of 173.8 db re 1 μ Pa, fish with a swim bladder may have impairment occur at 170 dB rms for 48h (Table 6-27). However, some evidence suggests that fish sensitive to acoustic pressure show a recoverable loss in hearing sensitivity, or injury when exposed to high levels of sound. Additionally, the sound emitted from support vessels would not exceed 8 hours, therefore, not reaching the threshold criteria for fish and resulting in a consequence level of IV impacts to fish.

TURTLES

The Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia, 2017) identifies noise interference as a threat to turtles. It details that exposure to chronic (continuous) loud noise in the marine environment may lead to avoidance of important habitat.

In 2006, the Working Group on the Effects of Sound on Fish and Turtles was formed to develop sound exposure criteria for fish and turtles. The Working Group developed guidelines with specific thresholds for different levels of effects for several species groups including turtles (Popper, et al., 2014) (Table 6-27). Popper et al. (2014) noted that there is no direct evidence of mortality or potential mortal injury to sea turtles from ship sound emissions.

Using semi-quantitative analysis, Popper et al. (2014) suggests that there is a low risk to marine turtles from shipping and continuous sound except for TTS near (tens of metres) to the sound source, and masking at near, intermediate (hundreds of metres) and far (thousands of metres) distances and behaviour at near and intermediate distances from the sound source. Based on this information, turtles may exhibit avoidance behaviour within the ADE. Revised thresholds for turtle PTS and TTS for continuous sound were subsequently developed (Finneran, et al., 2017 (Table 6-28). These thresholds were not reached in the current study, therefore the consequence level for turtles is assessed as level IV (Muellenmeister, Warren, Connell, & Koessler, 2023).

MARINE MAMMALS

Marine mammal physiological and behavioural impacts from underwater sound are detailed in Section 6.4.3.3

Unlike the other marine fauna groups detailed in section 6.4.4.3, marine mammals may express behavioural disturbances alongside injury and mortality. Drilling may cause masking of vocalisations of cetaceans due to the overlap in frequency range between signals and vocalisations. However, due to the limited propagation range of the relevant frequencies, the range at which the impact could occur will be small, within hundreds of meters.

The EPBC Act Protected Matters Search Tool Reports (PMST) for the ADE (Appendix C) found that five species of threatened cetaceans are likely to, or known to occur within the ADE (which includes the Marlin B platform):

- Blue whale (endangered)
- PBW (endangered)
- SRW (endangered)
- Fin whale (vulnerable)
- Sei whale (vulnerable).

These whales are also listed as migratory and are classified as LFCs with respect to the assessment of underwater noise impacts. There are also a number of listed migratory whales reported within the ADE (Table 6-25) as well as a number of other species listed as cetaceans and/or marine species (including dolphins and seals).

SEALS

Both the Australian and New Zealand fur seals (otariid seals) may occur within the ADE. Impacts are predicted to be temporary avoidance of the immediate area of the vessel. The consequence level is assessed as IV from underwater sound on seals, as there are no biologically important behaviours, BIAs, aggregation areas or natural haul-out areas identified within the ADE. Seals are observed to regularly haul-out on Esso's platform jackets in Bass Strait and anecdotally they do not appear perturbed by noise emanating from platform and vessel operations.

HIGH FREQUENCY CETACEANS

The PMST report for the activity area identified a number of migratory species (Table 6-25), several dolphin species, beaked and toothed whales, however, no BIAs or biologically important behaviours were identified within the ADE and therefore they are not assessed further.

Impacts are predicted to be temporary avoidance of the immediate area of the activity. The consequence level is assessed as III as there are no biologically important behaviours or BIAs identified within the ADE.

LOW FREQUENCY CETACEANS

The furthest distance to the TTS criteria is 50 m and the furthest distance to the behavioural criteria is 5.6 km. PTS is not considered credible due to the extended duration (24 hours) for which an individual would need to be in close proximity to the sound source. Both the OAs and the behavioural EMBA overlap the BIA for PBWs (Foraging – Possible Foraging).

The area affected by the behavioural threshold (98.5 km²) represents a small portion of the PBW known foraging BIA (0.32%) and a smaller area of its foraging BIA (0.05%). While TTS and PTS are not relevant because they are only triggered by the 24hr SEL, theoretically the area affected by TTS (0.008 km², being the largest area) represents a small portion of the PBW foraging BIA (0.000004%). Given these small spatial overlaps, if the activity has a temporal overlap with the presence and/or foraging of PBW, it is unlikely to result in behavioural changes that affect foraging. The same negligible impacts apply to other marine mammals that are migrating through or foraging in the activity area at the time of the activity.

For SRW, the area affected by the behavioural threshold does not reach the reproduction BIA and represents a small portion of the migration BIA (0.27%).

The consequence level is assessed as III for PBWs as there is potential for the temporary displacement of PBWs from a small area while foraging. The consequence level is also assessed as III for other LFCs as there are no biologically important behaviours identified within the ADE.

6.4.5 Impact assessment – low frequency cetaceans of conservation significance

The key species of conservation significance in the OAs and EMBA are the PBW and SRW (LFC). As such, an assessment of the effects of under sound has been undertaken.

6.4.5.1 Pygmy blue whales

As blue whales are listed as endangered under the EPBC Act and have known biologically important behaviours within the behavioural EMBA, it is appropriate that the principles of ecologically sustainable development as described in Part 3A of the EPBC Act be applied. In the context of potential impacts from underwater noise emissions from impulsive and continuous sources from this activity, a precautionary approach has been taken in assuming that blue whales may be present, albeit in relatively low numbers, in the Gippsland Basin at any time of year.

The Conservation Management Plan for the Blue Whale (CoA, 2015) requires that 'anthropogenic noise in BIAs be managed such that any blue whale continues to utilise the area without injury and is not displaced from a foraging area'. The Guidance on Key Terms within the Blue Whale Conservation Management Plan (DAWE & NOPSEMA, 2021) defines the requirements further "to ensure that any blue whale can continue to forage with a high degree of certainty in a Foraging Area, and that any blue whale is not displaced from a Foraging Area". Note that in the Conservation Management Plan for the Blue Whale, the OAs occur within an area defined as "possible foraging area" and that in the DAWE Guidance on Key Terms within the Conservation Management Plan for the Blue Whale (DAWE & NOPSEMA, 2021), the broader term 'foraging' encompasses 'Foraging Area', 'Known Foraging Area' and 'Possible Foraging Area.'

The Guidance on Key Terms within the Blue Whale Conservation Management Plan suggests a whale could be displaced from a foraging area if stopped or prevented from foraging, caused to move when foraging, or stopped or prevented from entering a foraging area. A whale is considered to be displaced from a foraging area if foraging behaviour is disrupted, regardless of whether the whale can continue to forage elsewhere within that foraging area (DAWE & NOPSEMA, 2021).

The consequence level from underwater sound impact is assessed as Ill for PBW as there is potential for their displacement while foraging. This is considered acceptable because:

- As there is limited data available on blue whales within the region, a precautionary approach (ALARP Decision Context B) has been adopted in considering controls to minimise and/or mitigate potential impacts from underwater noise.
- If blue whales are present, they are unlikely to be in large numbers.
- If blue whales are present, they are assumed to be foraging.
- The Conservation Management Plan for the Blue Whale (CoA, 2015) states that shipping and industrial noise are classed as a 'minor' consequence (defined as: individuals are affected but no affect at a population level).
- The Conservation Management Plan for the Blue Whale (CoA, 2015) states that "It is the high intensity signals with high peak pressures received at very short range that can cause acute impacts such as injury and death." As vessel noise is a continuous noise source and does not have high intensity signals, it is unlikely that they would cause injury to foraging pygmy blue whales.
- The area of overlap for the behavioural threshold is 0.02% for the foraging BIA.
- The ADE is ~455 km from the Bonney coast upwelling KEF, which is a known feeding aggregation area (Gill, et al., 2011) (McCauley R. , 1998).

Adopting the controls in Section 6.4.8 aim to prevent PTS, TTS and displacement impacts to PBW that may be foraging. The guidance on key terms (DAWE & NOPSEMA, 2021) regarding the definition of 'displaced from a foraging area' states that mitigation measures must be implemented to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a foraging area may occur. The implementation of the control measures in Section 6.4.8 and EPS in Appendix H means that blue whale displacement from a foraging area is unlikely to occur. As such, the activity will be managed in a manner that is not inconsistent with the Conservation Management Plan for the Blue Whale (CoA, 2015), specifically Action Area A.2.

6.4.5.2 Southern right whales

The OAs and behavioural EMBA both overlap with the SRW migration BIA. The closest OA to the SRW reproduction BIA is located 11.3 km away (see Figure 3-5).

There is the potential for SRWs to be present within the migration BIA at the time of the activity, particularly between April and October. The potential impacts were also assessed against the applicable Recovery Actions in

the National Recovery Plan for the Southern Right Whale (*Eubalaena australis*) (Table 6-30). Based on this assessment and controls in place the consequence level from sound impacts is assessed as Ill for SRW.

The SRW may avoid the area where the behavioural criteria are reached but there is no impediment to them continuing to and from coastal aggregation areas. The SRW is a highly mobile migratory species that travel thousands of kilometres between habitats used for essential life functions (DCCEEW, 2024)

The National Recovery Plan for the Southern Right Whale (DCCEEW, 2024) noted that along the Australian coast, individuals SRWs use widely separated coastal areas (1,600 – 3,800 km apart) within a season, indicating substantial coast-wide movement. As such, avoidance of the area is unlikely to prevent or hinder them from undertaking their seasonal migrations.

It is unlikely that calving whales would remain in the OAs with water depths greater than 100 m, as the whales prefer to occupy depths of less than 10 m. Conductor driving will only occur at the Marlin B Platform (40km away from reproduction BIA), therefore there are no direct effects of underwater sound from conductor driving within the reproduction BIA of SRW. JASCO modelled broadband SEL levels of conductor driving at a horizontal distance of 10 m and found the loudest source at 167.1 dB re 1uPa²s at 64.7 m penetration (Connell et. al, 2023). It was found that the received sound level from conductor driving would be at the behavioural threshold (160 dB SPL) at 450 m (Connell et. al, 2023).

Although 160 dB SPL is the recommended threshold for behavioural impacts (NOAA, 2019), there is uncertainty whether SRW have a lower sound threshold for other life stages such as reproduction cycle or juveniles. Therefore, SEL results from the JASCO report will be considered as the precautionary approach for SRW. TTS was reached at 2.93 km and PTS was reached at 670 m. As a precautionary approach, the observation zone for SRW will be increased up to 3 km radius while conductor driving activities are undertaken. This will ensure that SRW (of any age) will not be impacted by underwater sound from conductor driving.

The National Recovery Plan for the Southern Right Whale (DCCEEW, 2024) states that movements of SRW are important to the migrating population and habitat connectivity. The largest area covered by the behavioural EMBA is 0.27% of the SRW migration BIA and is therefore not likely to impede access to areas where biologically important behaviours are known to occur (i.e., reproduction areas in shallow coastal waters).

The National Recovery Plan for the Southern Right Whale (DCCEEW, 2024) states the contribution to the marine soundscape occur mostly off the Gippsland coast of Victoria and the northern NSW coastline, where there is greater vessel traffic from domestic and international shipping transits.

Table 6-30 Analysis of JUR P&A operation against the National Recovery Plan for the Southern Right Whale (*Eubalaena australis*)

Description	Justification
A1 - Maintain, implement, and improve efficacy of current legislative and management protection for SRW	
1. Maintain, implement, and improve efficacy of existing legislation and management arrangements (e.g., Managements Plans and Guidelines) as listed under section 1.2 of the <i>National Recovery Plan for the Southern Right Whale</i> .	The EP will implement the following commonwealth legislation and management arrangements (as outlined in section 1.2.1 of the the <i>National Recovery Plan for the Southern Right Whale</i>): <ul style="list-style-type: none"> • Part 8 Division 8.1 of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) (CM8 Vessel Master, EPS 13) • Australian National Guidelines for Whale and Dolphin Watching 2017 (CM8 Vessel Master, EPS 13) • EPBC Act Policy Statement 2.1 (see A5.4 below)
A5 - Assess, manage, and mitigate impacts from anthropogenic underwater noise.	
2. Actions within and adjacent to southern right whale BIAs and Habitat Critical to survival (HCTS) should demonstrate that it does not prevent any southern right whale	<u>Continuous Sound</u>

<p>from utilising the area or cause auditory impairment.</p>	<p>The OAs and behavioural EMBA both overlap with the SRW migration BIA. The closest OA to the SRW reproduction BIA is located 11.3 km away (see Figure 3-5).</p> <p>The potential for auditory impairment is when the support vessels are utilising DP thrusters for loading and unloading activities.</p> <p>The controls in place CM8 Vessel Master, CMP26 Fauna Observations and CMP 33, Adaptive Management will ensure that there are no activities undertaken if any SRW's are in the activity area. See Table 6-33 for full assessment and details of controls in place.</p> <p>It is considered with these controls in place and the distance from the migration and reproduction BIA that the activities will not prevent any SRW from utilising the area or cause auditory impairment.</p> <p><u>Conductor Driving</u></p> <p>Based on the JASCO modelling report, conductor driving activities reach the sound exposure threshold for PTS criteria at 670m and the TTS criteria at 2.93 km. SPL thresholds for PTS and TTS were not met. Only the behavioural threshold for SPL for SRW is triggered by conductor pile driving, with the distance to behavioural effect being 450 m.</p> <p>Given the activities are adjacent to the HCTS and that the modelling is based on the behavioural response threshold of 160db SPL it is recognised that the recovery plan highlights the heightened sensitivity of SRW may impact reproductive behaviours. The current uncertainty regarding the effects of anthropogenic noise on SRW these behaviours and life history traits. Even though there is a very low probability of SRW being present, Esso will apply the precautionary approach and apply the following additional controls:</p> <ul style="list-style-type: none"> • A dedicated platform based trained Marine Fauna Observation (MFO) will be in place for the duration of the conductor driving activities during peak migration season (April to October) which will cover the peak reproduction season (May to September) (See CMP 26, EPS17) • If the activities occur during November to March the trained platform personnel will undertake MFO (See CMP26 EPS 16) • The conductor driving impact EMBA shall be conservatively increased from 450 m to 3 km (covering the furthest distance to TTS threshold criteria) this will be applied to CMP33 and ensure that any SRW present in the larger EMBA adjacent to the HCTS will not be impacted as conductor driving activities will not begin or cease if a whale is present in the larger EMBA zone. (See CMP26 EPS17) <p>The activities are not likely to impact the SRW utilising the reproduction BIA as there is no overlap and is not anticipated to inhibit the use of the migration BIA (0.00002% overlap).</p>
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<p>3. Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised.</p>	<p><u>Continuous Sound – Support vessels whilst utilising DP</u></p> <p>The OAs and behavioural EMBA both overlap with the SRW migration BIA. The closest OA to the SRW reproduction BIA is located 11.3 km away (see Figure 3-5).</p> <p>The potential for auditory impairment is when the support vessels are utilising DP thrusters for loading and unloading activities alongside the JUR.</p> <p>The controls in place CM8 Vessel Master, CMP26 Fauna Observations and CMP 33, Adaptive Management will ensure that there are no activities undertaken if any SRW’s are in the activity area. See Table 6-33 for full assessment and details of controls in place.</p> <p>The activities will not impact the behaviours on SRW due to the controls in place and the distance from the migration and reproduction BIA. The activities will not impact the behaviours on SRW due to the controls in place and the distance from the migration and reproduction BIA.</p> <p>There is little overlap with the behavioural EMBA with migration BIA for SRW with 0.0001% overlap for continuous sound.</p> <p><u>Conductor driving</u></p> <p>The furthest distance to the PTS criteria is 670 m and the furthest distance to the TTS criteria is 2.93 km during conductor driving. Only the behavioural threshold for SRW is triggered by conductor driving, with the distance to behavioural effect being 450 m.</p> <p>Given the activities are adjacent to the HCTS and that the modelling is based on the behavioural response threshold of 160db SPL it is recognised that the recovery plan highlights the heightened sensitivity of SRW may impact reproductive behaviours. The current uncertainty regarding the effects of anthropogenic noise on SRW these behaviours and life history traits. Even though there is a very low probability of SRW being present, Esso will apply the precautionary approach and apply the following additional controls:</p> <ul style="list-style-type: none"> • A dedicated platform based trained MFO will in place for the duration of the conductor driving activities during peak migration season (April to October),this also will cover the peak reproduction season (May to September) (See CMP 26 EPS17) • If the activities occur during November to March the trained platform personnel will undertake MFO (See CMP26 EPS 16) • The conductor driving impact EMBA shall be conservatively increased from 450 m to 3 km (covering the furthest distance to any TTS) this will be applied to CMP33 and ensure that any SRW present in the larger EMBA adjacent to the HCTS will not be impacted as conductor driving activities will not begin or cease if a whale is present in the larger EMBA zone. (See CMP26, EPS17)
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	<p>The activities are not likely to impact the SRW utilising the reproduction BIA as there is no overlap and is not anticipated to inhibit the use of the migration BIA (0.00002% overlap).</p>
<p>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 SRW to the lowest possible level.</p>	<p>Although there are no seismic surveys in this operation, the control measures align with EPBC Act Policy Statement 2.1 by:</p> <p>A2: Trained crew</p> <ul style="list-style-type: none"> • Signed induction records (EPS 15) • Verification of competency certificates (EPS 14) <p>A3.1: Pre-start-up visual observations</p> <ul style="list-style-type: none"> • 30 minutes prior start of works (CMP33, EPS 19) <p>A3.3 Start-up delay procedure</p> <ul style="list-style-type: none"> • Delay works if SRW is seen during the 30 minutes prior works to commence (CMP 33, EPS 19) • Continue to delay once SRW has left observation zone or last seen minimum 30 minutes within the observation zone (CMP 33, EPS 19) <p>A3.4: Operations procedure</p> <ul style="list-style-type: none"> • Watchkeepers are consistently on the lookout for SRW and other marine megafauna while operations are in progress (CMP 26, EPS 15) <p>A4: Compliance and Sighting reports</p> <ul style="list-style-type: none"> • Esso’s responsibility to notify DCCEEW within 3 days if there is a cetacean vessel strike (Table 8-9) <p>B4: Increased precaution zones and buffer zones</p> <ul style="list-style-type: none"> • JASCO report has provided modelled distances for cetaceans (including SRW) responses from behavioural, masking, TTS and PTS (Appendix K) <ul style="list-style-type: none"> ○ The observation zone is extended to 3km to ensure that juvenile SRW are not impacted by impulsive sound (conductor driving) <p>B.6: Adaptive management</p> <p><i>Support vessels</i></p> <ul style="list-style-type: none"> • EPS 19 – If an SRW is observed during loading/unloading operations whilst a support vessel is alongside the JUR, the support vessel will stop operations if safe to do so • If unsafe to stop operations, reduce thrusters as low as possible and adjust heading <p><i>Conductor driving</i></p> <ul style="list-style-type: none"> • A MFO is employed on the platform during the migratory period (April – October) • The observation radius is extended from 450 m to 3 km as a precautionary method

<p>5. Quantify risks of anthropogenic underwater noise to SRW, including studies aimed to measure physiological effects, behavioural disturbance, and changes to acoustic communication (e.g., masking of vocalisations) to whales.</p>	<p>Use of JASCO reports (Matthews, Connell & McPherson, 2022; Connell, Kossler & McPherson, 2023) to provide modelling results, which assisted with deciding the control measures for this activity.</p>
<p>A6 - Manage, minimise, and mitigate the threat of vessel strike.</p>	
<p>1. Assess risk of vessel strike to SRW in BIAs.</p>	<p>The Watchkeepers and Platform MFO (on platform during peak season) will reduce the risk of vessel strike and entanglement as they will be continuously observing for marine megafauna and other marine users. Section 7.1 details the assessment of physical interaction with marine fauna. The risk ranking is Risk Category 4 (the lowest category) as the Vessel Master (CM8):</p> <ul style="list-style-type: none"> • will follow Part 8 Division 8.1 of the EPBC Regulations and the <i>Australian National Guidelines for Whale and Dolphin Watching 2017</i> • ensure the vessel is not knowingly travelling faster than 6 knots within 300 m of a whale or 150 m of a dolphin • ensure the vessel is not knowingly getting closer than 100 m of a whale or 50 m of a dolphin • ensure the vessel avoids rapid changes in engine speed or direction if a cetacean approaches the vessel within the above zones
<p>3. Ensure environmental impact assessments and associated plans consider and quantify the risk of vessel strike and associated potential cumulative risks in BIAs and HCTS.</p>	<p>Vessel strike consequences was identified as ‘major’ in the National Recovery Plan for the Southern Right Whale, however the incorporation of the SRW recovery plan, national guidelines and modelling reports has reduced the likelihood of vessel strike. This is further detailed in Section 7.1.</p>
<p>5. Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.</p>	<p>Watchkeepers and MFO responsibility to report SRW vessel strike incidents to these authorities, additional to DCCEEW (Table 8-8).</p>

6.4.6 Controls

- **CMP4:** Helicopter Pilot
- **CM8:** Vessel Master
- **CMP26:** Fauna observations
- **CMP33:** Adaptive Management

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.4.7 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.4.8 Demonstration of As Low as Reasonably Practicable

Table 6-31 Decision Context and justification

Decision Context B
<p>Impacts from underwater sound emissions are relatively well understood for marine mammals and most groups of fish, though the science is continuously evolving, which means there remains a certain low level of uncertainty in relation to the exact effects of underwater sound emissions. The activity is located in a BIA for foraging PBW, near to a reproduction BIA for SRW and within the SRW migration BIA. There is concurrent noise from existing operations, and there is uncertainty regarding the effects of sound on the behaviour of these and other protected species.</p> <p>Activities are well practised, and there are no conflicts with company values, no partner interests and no significant media interests.</p> <p>Esso believes ALARP Decision Context B should apply.</p>

Table 6-32 Good practice controls

Good practice	Adopted	Control	Rationale
<p>Part 8 Division 8.1 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations). Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p>	✓	<p>CM8: Vessel Master CMP4: Helicopter Pilot</p>	<p>The Vessel Master or Helicopter Pilot has responsibility for ensuring the requirements of these Regulations and Guidelines are followed.</p> <p>The Guidelines describe strategies to ensure whales and dolphins are not harmed during offshore interactions with people.</p> <p>These Guidelines were developed jointly by all state and territory governments through the Natural Resource Management Ministerial Council and, although more relevant for tourism activities, provide a list of requirements that are generally adopted by the oil and gas industry to minimise the risk of cetacean strike occurring; this also has the effect of ensuring distance from vessel propellers and helicopter rotor blades that cause sound emissions.</p> <p>Note: Both the lack of visibility of seals in the water and number of seals in close proximity to oil and gas offshore installations make applicability of these guidelines to seals impracticable. Furthermore, fauna interaction management actions as described in the guidelines will not prevent seals approaching vessels.</p>

Table 6-33 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Do not undertake the activity.	Eliminates underwater sound generation.	This is not a feasible option.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
<p>Delaying rig moves and supply vessel movements if a PBW or SRW is observed</p>	<p>Reduce underwater sound generation in behavioural zone</p>	<p>This is easily applied and part of normal operations in accordance with Part 8 Division 8.1 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations).</p> <p>Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p>	<p>Adopted</p>
<p>Trained bridge crew undertake continuous observations</p>	<p>Allows for fauna observations and adaptive management to be undertaken as per CMP26 and CMP33</p>	<p>Bridge crew are trained and competent in whales observation and species identification as part of their normal requirements and ability to comply with Part 8 Division 8.1 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p> <ul style="list-style-type: none"> • Trained bridge crew undertake continuous observations • Vessels are required to always have two Watchkeepers on the bridge when operating near the facility. • One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look-out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations. • All Watchkeepers hold Certificates of Competency recognized by the vessel Flag State which can only be obtained by completing years of sea service, including understudy time on watch on the bridge. • All vessel operators are required to maintain 	<p>Adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>compliance with the EPBC Act and other relevant conservation management plans. As such, vessel crews complete Marine Fauna Observation (MFO) training to ensure that obligations with respect to marine mammals are observed while they are in charge of the vessel.</p> <ul style="list-style-type: none"> • Esso verifies the crew MFO training as part of pre-hire and routine EP compliance inspections. • The vessels have multiple pairs of binoculars available to Watchkeepers • Marine megafauna identification charts are posted onboard. <p>JUR and Support Vessel Bridge and vessel crew are also provided an EP-specific environment awareness induction which further reinforces these requirements in whale observation, species identification, reporting requirements and adaptive management plan requirements (see CMP33). The project induction includes:</p> <ul style="list-style-type: none"> • Providing photos/pictures of the different megafauna expected in the area at the time of the geophysical activity, including in the form of posters for display on the vessel. • Instructions on the pre-start, requirements (as listed in CMP33). • Instructions on distance estimation, including the specification that marine binoculars with reticles are used. • Instructions on how to detect marine megafauna based on observations on the water surface and surrounds. • Instructions on data to be recorded for marine megafauna sightings, including time of observation, type and 	

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>number of species observed and estimated location coordinated.</p> <ul style="list-style-type: none"> The JUR crew are able to provide observation whilst the vessel is entering the OA and while undertaking loading/unloading activities. The JUR crew provide additional observations while the vessel is alongside undertaking unloading/loading activities and can implement CMP33 as required. <p>The JUR and Vessel crew are able to observe the 5.6 km observation zone whilst on DP alongside the JUR visually and with the use of binoculars. The Support vessel will also be undertaking continual observations of the observation zone whilst on route to the OA and JUR position.</p> <p>Previous logs from Esso's Gudgeon and Terakihi operations demonstrate observations were able to be made up to 10 km.</p> <p>For the vessels that are to be used on this campaign with an estimated bridge height of 14 m visual observations can be made up to 13 km</p>	
<p>Only conduct P&A activities outside of indicative peak PBW season (April to June)</p>	<p>Little benefit, given that PBW could be present at any time of the year.</p>	<p>Not feasible.</p> <p>The P&A Campaign is all year round, restricting operations to a certain period would add significant delays and cost to the program.</p> <p>The impact (in the event of whales being present) will be managed through controls in place.</p> <p>This control measure is not feasible and the costs of implementing it are grossly disproportionate to the environmental benefits.</p>	<p>Not adopted</p>
<p>Only conduct P&A activities outside of the SRW migration season (~April to October)</p>	<p>No benefit.</p>	<p>According to revised BIA data for the SRW, the OA is within the migration BIA, which occurs between April to October. The P&A campaign may occur any time within the year, therefore, restricting operations to a certain</p>	<p>Not adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>period would add significant delays and cost to the program.</p> <p>In the event of the presence of whales in the observation zone during the activity, the proposed control measures in section 6.4.6 will limit impacts.</p> <p>The cost of this control is grossly disproportionate to the additional benefits of implementing this control measure considering the distance between potential effects and the coastal migration corridor.</p>	
<p>Shut down all DP thrusters on the support vessel if whales (particularly PBW and SRW) are sighted near the vessel.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>Shutting down all thrusters would result in the support vessel drifting off location and if this happened, it could collide with the JUR and lead to damage to the vessel and/or JUR and associated safety risks to personnel on both facilities. This may also result in the potential for a hydrocarbon release.</p> <p>This control measure is not technically feasible and would lead to unacceptable safety risks.</p>	<p>Not adopted</p>
<p>Limit power to the support vessel while inside the OA.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>Power is maintained in a manner to safely operate the vessel. Depending on vessel operations and weather conditions, the thrusters will be maintained to as low as possible for safe operation.</p> <p>The support vessel must be able to hold station to safely undertake loading and unloading operations while alongside the JUR. Thruster power levels are optimised to the operating modes and conditions, and for efficiency reasons are maintained at the minimum power to safely maintain position. It is not safe to adjust thruster power outside of operationally defined ranges.</p>	<p>Not adopted</p>
<p>Use of competent (trained and experienced) MMOs.</p>	<p>Reduces potential displacement of foraging PBW or migrating SRW.</p>	<p>Two Marine Mammal Observers (MMO) onboard the JUR and/or the support vessel, with at least one of these MMOs on shift during daylight hours, means that a trained expert is dedicated to search for whales and implement whale management procedures.</p>	<p>Not adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>Cost: Having two competent MMOs onboard the JUR is required to ensure each shift can be reliably completed.</p> <p>To adequately cover all of the possible supply vessels in the fleet this would require six MMOs to available on each of the supply vessels all year round.</p> <p>MMOs would be contracted through a reputable consultancy that trains and provides MMOs on a range of projects around Australia or can provide the required training to dedicated personnel. This will add a negligible amount to the daily costs of the activity,</p> <p>Limitations:</p> <p>Given the 5.6 km EMBA is only in effect when the supply vessel is alongside the JUR using DP which is likely to occur up to three times a week for three to six hours and given the short distances to effect for LFC and the very small areas of overlap with PBW and SRW BIAs, having MMOs onboard the JUR and/or support vessel is not supported.</p>	
<p>Undertake pre-activity aerial survey within the behavioural zone for PBW.</p>	<p>Adopting this control measure can monitor the behavioural zone and increases the confidence that there are no foraging PBW in the behavioural zone that could be displaced upon the start of P&A activities.</p>	<p>Cost: Approximately \$50,000 per flight, including MMOs.</p> <p>Limitations: Flights in small aircraft over open water introduce significant safety risks, and there is no guarantee that whales will be spotted.</p>	<p>Not adopted</p>
<p>Undertake vessel-based observations for PBW and SRW while on route to the OA at the start of the activity and prior to and during JUR moves.</p>	<p>Increases the confidence that there are no foraging PBW or migrating SRW in the behavioural zone that could be displaced upon the start of P&A activities.</p>	<p>Cost: No additional costs. Bridge crew and personnel are trained in the process for visual observations of whales and will report any sighting as part of their ongoing compliance with the Part 8 Division 8.1 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and</p>	<p>Adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>Dolphin Watching 2017 (Commonwealth of Australia, 2017..</p> <p>Limitations: Vessel-based surveys do not guarantee that whales will be sighted, and the field of vision from the vessel (which depends on height of observation) only covers a small portion of the behaviour zone at any point in time. Observations can be hampered by the same reasons outlined for aerial flights (glare, rough seas, mist/fog).</p>	
<p>Undertake vessel-based observations for white shark (<i>Carcharodon carcharias</i>).</p>	<p>Understanding white shark abundance and distribution.</p>	<p>White sharks do not have a swim bladder, therefore underwater sound is unlikely to impact this species. The <i>Recovery Plan for the White Shark (Carcharodon carcharias)</i> (DSEWPAC, 2013) does not list underwater sound as a threat. The overlap with the reproduction BIA for white sharks is low (9.6%). The likelihood of occurrence in this area of overlap is low, as the ADE does not overlap with inshore reefs (CSIRO, 2021), where white sharks are known to reproduce.</p> <p>Vessel-based observations will not guarantee that white sharks will be sighted. Observations can be hampered by the same reasons outlined for aerial flights (glare, rough seas, mist/fog).</p>	<p>Not adopted</p>
<p>Undertake vessel-based observations for turtles (particularly leatherback turtles)</p>	<p>Understanding turtle abundance and distribution</p>	<p>There are no nesting beaches within the ADE or Bass Strait.</p> <p>The <i>Recovery Plan for Marine Turtles in Australia</i> (DoEE, 2017) details noise interference as a threat, however the absence of turtle BIAs in Bass Strait together with the known low abundance of turtles in Bass Strait, does not support the need to undertake pre-activity surveys for turtles.</p> <p>Vessel-based observations will not guarantee that turtles will be sighted. Observations can be hampered by the same reasons outlined for aerial flights (glare, rough seas, mist/fog).</p>	<p>Not adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
<p>Dedicated daily aerial surveys around the OA during the activity.</p>	<p>Adds to the knowledge of whale distribution in the region.</p>	<p>Cost: Estimated at \$50,000/day. It also comes with environmental costs (e.g. GHG emissions from fuel use).</p> <p>Limitations: Adding additional aerial flights adds additional safety risks.</p> <p>While this control measure would add to the current paucity of data on PBW and SRW distribution and abundance in eastern Bass Strait, the costs and safety risks are grossly disproportionate to the potential environmental benefit for this activity given the very small area of underwater sound overlap with the PBW foraging BIAs and SRW migration BIA.</p>	<p>Not adopted</p>
<p>Move support vessel away from the JUR during unloading/loading when the vessel is using DP if a PBW or SRW is observed.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>If loading/unloading activities are able to be stopped safely and quickly, they will be ceased, and the support vessel will move away from the JUR and cease using DP until the whale moves out of the observation zone radius or when 30 minutes have lapsed since the last sighting.</p> <p>If a vessel is alongside the JUR undertaking loading/unloading and a whale is sighted, it may not be practicable or safe for the operation to cease and the vessel to move away (e.g. during diesel bunkering, or complex lifts).</p> <p>It may take some time to cease the activity of loading/unloading in a safe manner, by which time it is likely that an individual whale would have passed. If feasible, vessels in this scenario will reduce thrusters and adjust heading (CMP33) and this will help minimise noise and disturbance.</p>	<p>Adopted subject to safety considerations</p>
<p>Undertake aerial surveillance with drones.</p>	<p>Monitoring and detection.</p>	<p>Drones have been considered as a method of increasing the observation distance of MMOs and monitoring the PTS, TTS and observation zones. Drone surveys have been carried out for cetaceans mainly in the nearshore marine environment via beach operations.</p>	<p>Not adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>Esso adopted the use of drones during Seahorse/Tarwhine P&A activities to extend the field of vision from the bridge. Observations were made by the MMO from the bridge in all circumstances, well before a drone could be launched. And in all cases, whale observations were confirmed by means of binoculars and photograph/video images from the bridge, rather than through use of a drone.</p> <p>Drone surveys have not proven to be effectively used as a real-time monitoring method. Drone effectiveness offshore is limited due to the following:</p> <ul style="list-style-type: none"> • physical range of drones is only approximately 4-5km • drone operations are sensitive to wind, particularly gusting winds, and excessive wave action while launching and retrieving, which would limit the use of this equipment • technical support and operators required. <p>Any sightings are more readily observed from the bridge, using powerful binoculars, or even with the naked eye, rather than with a drone, even when it is equipped with a high-definition camera with remote display on the bridge.</p>	
Use of Passive Acoustic Monitoring (PAM)	Monitoring and detection.	<p>As a cetacean detection method, PAM has been used to detect whales that vocalise at high frequencies/intensities such as (HFC and VHFC (e.g., sperm whales) and, in conjunction with visual monitoring, can enhance cetacean detection effectiveness.</p> <p>PAM has the advantage of potentially detecting cetaceans during night hours and during periods of poor visibility when they cannot be visually detected.</p> <p>Although PAM can be a valuable tool in identifying the presence of cetaceans,</p>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>the following factors limit its effectiveness:</p> <ul style="list-style-type: none"> • most suitable for HFC and VHFC, which are generally of lower concern in this region compared to LFC. It is difficult for PAM to pick up vocalisations of LFC such as blue whales and SRW • bearing accuracy and range estimation is limited because it is not as accurate as visual observations. <p>Observations by vessel masters and crew negate the need for using PAM given that LFC (which surface to breath more regularly than deeper-water HFC and VHFC) will generally be able to be easily detected.</p>	
<p>Whale observations Marlin B Platform during conductor pile driving.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>During conductor drive activities at Marlin B, crew trained in visual observation on the platform will commence visual observations of the extended 3 km observation zone for 30 minutes prior to undertaking conductor drive activities such that if a whale is observed in the observation zone, conductor piling will not commence until the whale has left the observation zone and has not been observed for more than 30 minutes.</p> <p>Observations will continue during the activity and if at any time a whale is observed in the observation zone the conductor driving activity will cease until the whale has left the observation zone and not been observed for more than 30 minutes.</p> <p>During peak migration season (April to October) a dedicated trained MFO will be on board the Platform.</p>	<p>Adopted</p>
<p>Soft-starts for conductor pile driving.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>The predicted distances to effect for underwater sound modelled for conductor pile driving is predicted to result in a 0.014% overlap with the PBW foraging BIA.</p>	<p>Not adopted</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>Gradually increasing the energy level of the piling sequence will add a short period of time to the piling activity and the increased time inherently adds cost to this activity. The pre-conductor pile driving control measure noted in the row above is considered sufficient in light of the small BIA overlaps.</p>	
<p>Deploy bubble curtains around the conductor pile driving activity.</p>	<p>Reduces the potential for PTS, TTS and behavioural impacts.</p>	<p>Bubble curtains are sometimes utilised within offshore construction projects that involve piling or detonation of explosives. The bubble curtain (perforated hose) is deployed to the seabed and encompasses the noise source in an aim to obscure noise transmission, resulting in a reduction of received sound levels to receptors outside of the bubble curtain. Circa 15 dB noise attenuation has been reported for impulsive noise from piling; efficacy is dependent on various factors.</p> <p>The deployment of bubble curtains for this activity is limited by the following factors:</p> <ul style="list-style-type: none"> • Water depth – the maximum working depth of bubble curtains is typically <100m. Providing oil-free air to the seabed would require a large quantity of large diesel-run air compressors housed on at least one additional dedicated DP support vessel, which would add more underwater sound. • Currents – bubble curtains are drastically impacted by currents. Current speeds and directional shifts with wind and tide would result in bubble curtains being distorted and ineffective by the time bubbles rise from the seabed to surface. <p>This control measure is not technically feasible at the activity location.</p>	<p>Not adopted</p>

6.4.9 Demonstration of acceptability

Table 6-34 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activity is not considered as having the potential to result in long term or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>Requirements of Part 8 Division 8.1 of the EPBC Regulations, although more relevant to tourism activities (e.g. whale watching), have been adopted.</p> <p>Noise interference is a recognised threat to the species in the following conservation management plans and advice. The proposed controls are consistent with conservation/management actions in:</p> <ul style="list-style-type: none"> • <i>Conservation Management Plan for the Blue Whale 2015–2025</i> (Department of the Environment, 2015) (CMPBW) • <i>Conservation Advice for humpback whales</i> (TSSC, 2015) • <i>The National Recovery Plan for Southern Right Whales</i> (DCCEE, 2024) • <i>Conservation Advice for sei whales</i> (TSSC, 2015) • <i>Conservation Advice for fin whales</i> (TSSC, 2015) • <i>Recovery Plan for Marine Turtles in Australia, 2017–2027</i> (DoEE, 2017) • <i>Recovery Plan for the White Shark (Carcharodon carcharias)</i> (DSEWPAC, 2013)
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to sound emissions (except those associated specifically with marine geophysical operations) but the controls proposed meet the strategic objectives of the Upstream Environmental Standards.

Factor	Demonstration criteria	Criteria met	Rationale
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements; and OIMS System 8-1 objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning sound emissions.

6.5 Light emissions

6.5.1 Sources of light emissions

Both the JUR and support vessels are equipped with navigational and safety lights. It is expected that operations will be conducted 24 hours a day.

Light may also occur in the event of flaring activity that is only required in the unlikely event of trapped gas being found.

6.5.2 Impacts of light emissions

Impacts of light emissions considered are:

- change in fauna behaviour (attraction of light sensitive species affecting predator-prey dynamics; behavioural disturbance leading to injury/mortality).

6.5.2.1 Change in fauna behaviour

PLANKTON AND FISH

Plankton and fish (and marine invertebrates such as squid) may be directly or indirectly attracted to lights at distances of up to 5 km (Shell, 2010, leading to aggregation at the surface and increased predation.

The proportion of zooplankton exposed and subjected to higher predation rates within the vessel light field is negligible.

The OAs are within a distribution BIA for the great white shark; however, no threats have been identified in the Recovery Plan for the Great White Shark. For fish and squid, impacts are expected to be localised and short-term (behavioural change i.e. attraction will cease once the light ceases), any potential effect of increased predation would be undetectable at a population level and is considered inconsequential.

MARINE REPTILES – TURTLES

Light pollution can be an issue along, or adjacent to, turtle nesting beaches where emerging hatchlings orient to, and head towards, the low light of the horizon unless distracted by other lights which disorient and affect their passage from the beach to the sea (Commonwealth of Australia, 2017).

Three listed/threatened species of marine turtle may occur within the OAs, although there are no BIAs or critical habitats, and all marine turtles are known to have a more northerly distribution. The *Recovery Plan for Marine*

Turtles in Australia, 2017 – 2027 (DoEE, 2017) lists light pollution as a key threat, however this relates specifically to turtle hatchlings and nesting sites. It is anticipated that the light emissions from the activities within the OAs do not impact on marine turtles.

BIRDS

Birds may be attracted to vessels at night due to light glow. Bright lighting can disorientate flying birds resulting in behavioural changes e.g. circling light sources leading to disrupted foraging and starvation, or exhaustion (leading ultimately to injury or mortality near the light source) (Wiese, et al., 2001).

Seabirds that are active at night while migrating, foraging or returning to colonies that are directly affected include petrels, shearwaters, albatross, noddies, terns and some penguin species. Fledglings are more affected by artificial lighting than adults due to the synchronised mass exodus of fledglings from their nesting sites. They can be affected by lights up to 15 km away (Commonwealth of Australia, 2020).

Artificial light can cause significant impacts on Procellariiforms (petrels, storm petrels, gadfly petrels, diving petrels and shearwaters) that breed in burrows and only attend breeding colonies at night (Commonwealth of Australia, 2020). Fledglings often become disoriented and grounded because of artificial light adjacent to rookeries as they attempt to make their first flight to sea, a phenomenon known as 'fallout'. The effects of artificial lighting from road lighting on short-tailed shearwater fledglings were investigated (Rodríguez, et al., 2014). The study established that, by removing the light source from nesting areas, there was a decrease in grounded fledglings and a corresponding reduction in bird fatalities. Less studied are the effects of light on the colony attendance of these nocturnal species which could lead to higher predation risks by gulls, skuas or other diurnal predators (Commonwealth of Australia, 2020).

The OAs are more than 20 km offshore and overlap foraging BIAs for black-browed albatross, Campbell albatross (*Thalassarche impavida*), Indian yellow-nosed albatross, wandering albatross, Buller's albatross (*Thalassarche bulleri*) and shy albatross. Light emissions are not identified as a threat for these species in the *National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016* (DSEWPAC, 2011). The closest breeding BIAs for light-sensitive seabirds which may forage in the area, short-tailed shearwaters and common diving petrels (*Pelecanoides urinatrix*), are located on the Tasmanian islands of Bass Strait over 100 km away from where the activities will be occurring.

Any impacts to migratory or foraging birds from light emissions will be highly localised and short-term (behavioural disturbance will cease once the light ceases). Injury/mortality of transient individuals disturbed by the presence of lighting from the JUR or support vessels will not affect population levels.

MARINE MAMMALS

There is no evidence to suggest that artificial light sources adversely affect the migratory, feeding or breeding behaviours of cetaceans. Cetaceans predominantly utilise acoustic senses to monitor their environment rather than visual sources (Simmonds, Dolman, & Weilgart, 2003), so light is not considered to be a significant factor in cetacean behaviour or survival.

The potential impacts from light emissions are conservatively considered to be Consequence Level III as this type of activity may result in highly localised, short-term impacts to seabird species of recognised conservation value, but is not expected to affect the population or local ecosystem functions.

6.5.3 Controls

- **CMP30:** Lighting will be limited
- **CMP40:** Contingency venting and flaring procedures

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.5.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.5.5 Demonstration of As Low as Reasonably Practicable

Table 6-35 Decision Context and justification

Decision Context A
<p>The use of navigational lights and other lights to enable 24-hour operations to be undertaken, are routine activities in the offshore petroleum sector and are required for the safety of the vessels and the crew. Other 24-hour vessel operations are not unusual in this area. Commercial fishing activities and merchant vessels in Bass Strait use similar navigational lights or other lights for safety purposes.</p> <p>Good practice measures, minimising external lighting to reduce exposure and incident reporting are implemented in accordance with the National Light Pollution Guidelines for Wildlife (Commowwealth of Australia, 2020).</p> <p>The impacts associated with light emissions are well understood and the most significant impacts of light emissions are generally associated with operating within close proximity of shorelines that support light sensitive bird species. The impact assessment undertaken has identified that impacts are non-existent or inconsequential for all marine fauna other than several species of foraging seabird (albatross) which may be affected by a highly conservative Consequence Level III impact, due to their threatened/vulnerable status.</p> <p>No objections or claims were raised by relevant persons with regard to light emissions.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-36 Good practice controls

Good practice	Adopted	Control	Rationale
<p>National Light Pollution Guidelines for Wildlife (Commowwealth of Australia, 2020).</p>	✓	<p>CMP30: Lighting will be limited</p>	<p>Mitigation options relevant to the activities being undertaken have been adopted from the light management actions for seabirds and migratory shorebirds provided in the National Light Pollution Guidelines for Wildlife. Specifically:</p> <ul style="list-style-type: none"> • reduce unnecessary lighting outdoor, deck lighting on all vessels (and permanent and floating oil and gas installations) in known seabird foraging areas at sea • report seabird interactions • reduce deck lighting to a minimum required for human safety (on vessels moored near nocturnal shorebird foraging and roost areas), and those vessels operating offshore • record migratory shorebird strike. <p>Actions specifically related to breeding season have not been adopted due to the absence of breeding BIAs for light sensitive seabird species which may be foraging in the OA.</p> <p>Note: Reporting will be undertaken as per Section 8.10.</p>

Table 6-37 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.5.6 Demonstration of acceptability

Table 6-38 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>Management actions for seabirds and migratory shorebirds contained in the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (Commowearth of Australia, 2020). have been adopted where relevant for JUR/vessel-based activities.</p> <p>Light pollution is a recognised threat to turtles and the proposed activity is consistent with conservation/management actions in:</p> <ul style="list-style-type: none"> • <i>Recovery Plan for Marine Turtles in Australia, 2017-2027</i> (DoEE, 2017).
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to light emissions, but the activities proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements, and • OIMS System 8-1 objective to qualify, evaluate and select contractors based on

Factor	Demonstration criteria	Criteria met	Rationale
			their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning light emissions.

6.6 Planned discharge – Treated bilge water and deck drainage

6.6.1 Sources of treated bilge water and deck drainage

Bilge water consists of oily water that has accumulated in the lowest part of the vessel/JUR typically from closed deck drainage and machinery spaces. Bilge water is treated on board the vessel or JUR using the oily water separator to reduce the discharge to below the regulated level of less than or equal to 15 ppm. Oily content exceeding the 15 ppm set levels is routed back to the oily water separator, which recirculates treated water back to the hazardous drain holding tank. Oily water is recirculated until the oil content returns to below set levels. Sludge from the oily water separator is transferred to the sludge tank (refer to Section 3.2.3.2 of *J-107 Safety Case* (Valaris, 2021)).

Deck drainage comprising seawater from waves/spray, rainwater and deck wash water, may contain minor quantities of detergents, and oil and grease which has been spilled on the deck.

6.6.2 Impacts of treated bilge water and deck drainage discharge

Impacts of the discharge of treated bilge water and deck drainage considered are:

- change in water quality.

6.6.2.1 Change in water quality

A discharge of treated bilge or deck drainage is non-continuous and infrequent. Given the nature of bilge or deck washing discharges, marine fauna most susceptible to toxic impacts are mainly limited to less mobile fish embryo, larvae, and other plankton. There is potential for short-term impacts to species that rely on plankton as a food source. Any impact to prey species would be temporary as the duration of exposure would be limited, and fish larvae and other plankton are expected to rapidly recover as they are known to have high levels of natural mortality and a rapid replacement rate (UNEP, 1985).

6.6.3 Controls

- **CM9:** Class certification

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.6.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.6.5 Demonstration of As Low as Reasonably Practicable

Table 6-39 Decision Context and justification

Decision Context A
Discharge of treated bilge and deck drainage offshore (from vessels and other facilities) is a commonly practised activity.

Decision Context A
<p>The potential impacts are well regulated via various treaties and legislation, both nationally and internationally, which specify industry best practice control measures. These are well understood and implemented by the industry. The consequence has been identified as Consequence Level IV (the lowest level).</p> <p>No objections or claims were raised by relevant persons with regard to the discharge of treated bilge water and deck drainage.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-40 Good practice controls

Good practice	Adopted	Control	Rationale
<p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil.</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships.</p>	✓	CM9: Class certification	<p>The vast majority of commercial ships are built to and surveyed for compliance with the standards laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL.</p> <p>A vessel built in accordance with the applicable Rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those Rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require vessels (as appropriate to class) hold an International Oil Pollution Prevention certificate, are equipped with an approved oil discharge monitoring and control system which ensures that the oil-in-water content of treated bilge water is <15 ppm and maintain an Oil Record Book.</p> <p>MARPOL Annex V specifically require vessels (as appropriate to class) to utilise deck cleaning products which are not a “harmful substance” in accordance with criteria in Appendix to MARPOL Annex III nor contain a component that is carcinogenic, mutagenic or reprotoxic.</p>

Table 6-41 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.6.6 Demonstration of acceptability

Table 6-42 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of MARPOL Annexes I and V have been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia:</p> <ul style="list-style-type: none"> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</i> • <i>Marine Order 91 (Marine pollution prevention – oil) 2014</i> • <i>Marine Order 95 (Marine pollution prevention – garbage) 2018.</i>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	The proposed controls meet the requirements of the Upstream Water Management Standard specifically “to meet regulatory requirements and legally binding agreements”.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements, and • OIMS System 8-1 objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.

Factor	Demonstration criteria	Criteria met	Rationale
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning treated bilge water and deck drainage discharges.

6.7 Emissions to air

6.7.1 Sources of emissions to air

The use of fuel, specifically Marine Diesel Oil (MDO) used to power engines, generators and mobile and fixed plant (e.g. ROV, cranes), and the possible venting of natural gas from the JUR fluids handling package, will result in gaseous emissions of greenhouse gas (GHG) such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), along with non-greenhouse gas emissions such as sulphur oxides (SO_x) and nitrous oxides (NO_x). Minor additional emissions from helicopter support operations (an extra stop to JUR).

As per the *Greenhouse Gas Protocol: a Corporate Accounting and Reporting Standard* (World Resources Institute and World Business Council for Sustainable Development, 2004), greenhouse gas emissions are classified as:

- Scope 1 – emissions that a company makes directly
- Scope 2 – emissions a company makes indirectly such as through the purchase of electricity
- Scope 3 – emissions associated, not with the company itself, but that the organisation is indirectly responsible for, up and down its value chain. For example, from buying products from its suppliers and the emissions associated with making the products, and from its own products when customers use them.

For the purposes of this activity, the following applies:

- Scope 1 – emissions associated with the activity (i.e. combustion of MDO from the vessel engines, generators and fixed and mobile deck equipment during the activity, and combustion of aviation gas used by the helicopters while in the PSZ). Since the JUR is operated by Valaris, these emissions are reported by Valaris
- Scope 2 – are not relevant to this activity as no electricity will be purchased
- Scope 3 – is not relevant for this activity as the production, transport and use of fuel is not part of the activity.

The sources of fuel combustion and gas venting/flaring expected for this activity are presented in Table 6-43.

Table 6-43 Sources of GHG emissions from the activity

Source	Fuel type	Predicted volume of use	Duration of source of emissions	Total volume for activity
JUR	MDO	15 m ³ /day while on location	480 days (assumes worst-case time frame of 16 months)	7,200 m ³
Support vessel		7 m ³ /day while operating (though much less when considering time spent within each OA)		3,360 m ³
Helicopter*	Aviation gas	Based on using 7 litres/minute and spending 10 minutes in the OA on	345 weekdays (no travel on weekends)	25 m ³

Source	Fuel type	Predicted volume of use	Duration of source of emissions	Total volume for activity
		each weekday, this is 70 litres (0.07 m ³ /day)		
Whiptail-1A	Gas (venting/flaring)	Contingency in the event of unexpected trapped gas – estimated as 322m ³	Potential venting/flaring activity at each well (venting or flaring will be dependent on volume of gas required to bleed off)	322 m ³
Mulloway-1		Contingency in the event of unexpected trapped gas – estimated as 206m ³		206 m ³
East Pilchard-1		Contingency in the event of unexpected trapped gas – estimated as 14,461m ³		14,461m ³

*Note that calculations on helicopter fuel use are based on consumption rates recorded by helicopters used on an exclusive basis in the Esso fleet, based in Longford, Victoria. Esso undertakes routine weekday helicopter flights between platforms (and MODUs when they are in use), where personnel and supplies are dropped off and collected each weekday as part of normal operations. Wherever the JUR is during this activity, it is simply considered another location during the routine flights.

6.7.2 Impacts of atmospheric emissions considered are:

- change in air quality (localised and temporary decrease in air quality)
- contribution to the global greenhouse gas effect.

6.7.2.1 Decrease in air quality

A recent review of the National Environment Protection (Ambient Air Quality) Measure (National Environment Protection Council, 2021) recommended that exposure to nitrogen dioxide (NO₂) on an hourly basis should be below 0.08 ppm and on an annual average of less than 0.015 ppm. BP Development Pty Ltd. has modelled NO₂ emissions from a MODU power generation for an offshore project (BP, 2013). NO₂ is the focus of the modelling as this is considered the main (non-greenhouse) atmospheric pollutant of concern, on account of the larger predicted emission volumes compared to the other pollutants, and the potential for NO₂ to impact on human health (as a proxy for environmental receptors). Results of this modelling indicated that even the highest hourly averages (0.00039 ppm or 0.74 µg per m³) were restricted to within approximately 5 km from the offshore MODU (BP, 2013), which is also expected to apply to the JUR.

Potential receptors above the sea surface within 5 km of the activity that may be exposed to reduced air quality include seabirds and marine fauna that surface for air (e.g. cetaceans and turtles). The OAs are within the foraging BIAs for the PBW and some seabird species, however given that emissions will quickly dissipate, the potential for any exposure to reduced air quality is not expected to affect the health of these fauna.

Given there is minimal venting/flaring of gases required, the fluids are either processed through the mud gas separator as described in Section 2.6.1 (including the low volume and slow release rates if venting does occur), or would be or processed via the bleed of package and vented or flared.

. This activity is not expected to generate exposures significant enough to result in impacts to any identified environmental receptors.

6.7.2.2 Contribution to the global greenhouse gases effect

The CO₂-e Scope 1 GHG emissions for the activity have been estimated using the National Greenhouse and Energy Reporting (NGER) online calculator as presented in Table 6-44.

Table 6-44 Predicted GHG emissions from the activity

Source	Fuel type	Total volume for activity	Duration of source of emissions	Total CO ₂ -e emissions
JUR	MDO	7,200 m ³	480 days	19,557 tonnes
Support vessel		3,320 m ³		9,018 tonnes
Helicopter*	Aviation gas	25 m ³	40 weekdays	65 tonnes
Whiptail-1A	Gas (venting/flaring)	322 m ³	Potential venting/flaring activity at each well	1 tonne
Mulloway-1		206 m ³		<1 tonne
East Pilchard-1		14,461 m ³		29 tonnes
		25,574 m ³ total		28,671 tonnes total

In total, it is estimated that up to 28, 671 tonnes CO₂-e of Scope 1 GHG emissions will be generated for the activity, which represents 1.5% of ExxonMobil’s Australian total Scope 1 emissions for the 2021-22 financial year (1,857,397 tonnes CO₂-e as per the NGERs reporting).

While these emissions add to the GHG load in the atmosphere, which adds to global warming effect, they are small on a state, national and global scale. The activity is similar to other industrial activities contributing to the accumulation of GHG in the atmosphere. Consequently, no further evaluation has been undertaken.

6.7.3 Controls

- **CM9:** Class certification
- **CMP40:** Contingency venting and flaring procedures

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.7.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.7.5 Demonstration of As Low as Reasonably Practicable

Table 6-45 Decision Context and justification

Decision Context A
<p>Emissions to air from venting and fuel combustion generated by JUR’s, vessels, helicopters and other offshore facilities is a common occurrence both nationally and internationally.</p> <p>Managing the impacts from emissions to air is well understood with good practice controls that are well implemented by the industry. Emissions will dissipate rapidly and the consequence of any impact is assessed as Consequence Level IV (the lowest level).</p> <p>No objections or claims were raised by relevant persons with regard to emissions to air.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-46 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex VI Regulations for the Prevention of Air Pollution from ships.	✓	CM9: Class certification	<p>The vast majority of commercial ships are built to and surveyed for compliance with the standards laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL.</p> <p>A vessel built in accordance with the applicable Rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those Rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex VI specifically requires vessels (as appropriate to class) hold an International Air Pollution Prevention certificate for each diesel engine of >130 kW; vessel engine NOx emission levels comply with Regulation 13; sulphur content of any fuel oil used on board is <0.5 %; and ongoing maintenance of engines, generators and deck equipment to ensure efficient operation.</p>

Table 6-47 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

6.7.6 Demonstration of acceptability

Table 6-48 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.

Factor	Demonstration criteria	Criteria met	Rationale
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of MARPOL Annex VI have been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia:</p> <ul style="list-style-type: none"> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</i> • <i>Marine Order 97 (Marine pollution prevention – air pollution) 2013.</i>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	Proposed controls meet the requirements of the Upstream Air Emissions Standard.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements, and • OIMS System 8-1 objective to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning emissions to air.

6.8 Planned discharge – Cement

6.8.1 Sources of cement discharge

P&A activities use cement for the setting of abandonment plugs and will result in planned discharges of cement.

The estimated volumes of cement discharged to the environment include:

- a small proportion of dry cement from the bulk transfer process may be blown overboard during pneumatic transfer operations
- in the highly unlikely event that a pumped cement plug fails to set, potentially up to 135 barrels (22m³).per well (depending on the design requirements) of cement slurry (mixed cement) will be circulated out and discharged at the surface

- washing the cementing pump, piping and blending tanks with seawater to prevent curing, resulting in a release of cement/water mix (surface discharge of approximately 20 barrels (3m³ per well).
- No planned bulk discharge of cement
- Potentially a small volume of mixed slurry at the end of the campaign in the event that it cannot be transferred to the next operator, cannot be transferred to other operations, cannot pumped down hole and cannot be transferred onshore. The volume is expected to be a maximum of 50m³.

Quality control, in particular cement quality, is an important consideration for well cementing activities, as the consequences of a failed cement job have considerable commercial and well integrity implications.

Cement is a hygroscopic material that actively absorbs moisture from the atmosphere. This process is accelerated from the moisture rich present in the offshore environment. Cement will also absorb water from the compressed air used during the pneumatic transfer process to move cement from the bulk tanker to the vessel and from the vessel to rig, and from any residual moisture present in the transfer lines. For these reasons, cement sent offshore is typically sent in batches allocated for specific jobs in order to minimize the number of transfers and to minimize the amount of time that cement is held offshore before use.

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. Where the cement has absorbed enough water from the atmosphere and the transfer processes, cement may set in place in the transfer tanks of the vessel, forming large rocks which block the transfer systems, requiring disassembly of the system to clear the blockages. In extreme situations, cement may require removal by jack hammer and other percussive techniques.

The additional exposure time in which the cement is present in a moisture rich environment offshore, coupled with the additional transfer operations required to return unused surplus cement from a drilling rig back onshore for disposal, represents a significant increase in risk exposure when compared to the initial process of transferring newly manufactured cement offshore.

As a drilling or abandonment program approaches completion, cement volumes are actively managed to reduce the amount of bulk cement product remaining on board. Contingency quantities of cement are required, so as to allow a job to be repeated in the event that difficulties are encountered during the initial cementation attempt, which result in the placement of a cement plug that fails to achieve the required technical standard, or the cement plug does not stay in the intended position and requires supplementation to satisfy the placement criteria specified in the Well Operations Management Plan.

In ideal circumstances, subject to weather conditions and sea states, this contingency will be held on the vessel such that it can be readily transferred to other Esso abandonment operations where possible without having to ship and transfer the cement from the vessel to the JUR and then back to the vessel. Where this contingency quantity is present on the rig and is not utilized in contingency operations, a small surplus of cement may be present at the end of the program.

The potential for excess cement being left on board the JUR, arises in the event that scheduling considerations result in one of the abandonment operations being the last in the Esso campaign. It remains possible for excess cement to be used in subsequent Esso JUR campaigns such as for Kipper or Turrum (which are subject to separate EP's).

Should an abandonment operation addressed in this EP represent the last operation with Esso as the rig operator, all efforts will be made to minimize the quantity of cement remaining on the JUR, and to request with the next operator to accept the remaining quantity of cement on board. Whether the next operator will accept the cement remaining on board depends upon factors such as provenance and history of the cement, the period of time that the cement will potentially remain on board until the next operator can utilise it, whether the cement qualities and characteristics are consistent with the next operators cementing requirements, and whether the next operators cementing contractor will accept the use of the remaining cement in its programmed operations. Such factors are not directly within Esso's control.

In the event that excess cement is not able to be transferred to the next operator, the last cementing job to be conducted under this EP will be the placement of an abandonment plug. The largest expected volume of cement required to place an abandonment plug, is estimated to be a maximum of 50m³. As such, a surplus of equivalent

volume may be present on the JUR. In the event that this cement is not able to be transferred or utilized, this cement will be mixed and pumped downhole above the last well isolation plug. In the event that all other alternative options for disposal have been unsuccessful, Esso will undertake a feasibility analysis of options to transfer product back to shore for onshore disposal. Discharge to the marine environment will only occur when there are no other safe or technically feasible options and therefore when ALARP. This may result on a one-off discharge of this quantity of cement to the environment after the cement has been mixed and diluted with a substantial quantity of seawater such that any particles can be expected to disperse rather than aggregate as they settle due to normal wave and current action.

Note: It has been noted that trace amounts of mercury can be present in cement originating from the raw materials used in the process. The research indicates that the mean concentration expected in Portland cement is 0.01ppm, significantly below the 1ppm criteria as discussed in section 6.10.2 for other bulk material selection (Krzysztof, Gorecki, & Burmistrz, 2021).

6.8.2 Impacts of cement discharges

Impacts of the planned discharge of cement on marine fauna considered are:

- change in water quality (increased turbidity of the water column and potential toxicity).

6.8.2.1 Change in water quality

INCREASED TURBIDITY IN THE WATER COLUMN

Cementing fluids are not routinely discharged to the marine environment at the surface; however, volumes of a cement-water mix may be released in surface waters during equipment washing. The cement particles will disperse under action of waves and currents, and eventually settle out of the water column; the initial discharge will generate a downwards plume, increasing the initial turbidity of receiving waters.

Modelling of the release of 18 m³ of cement wash water (De Campos, Paiva, Rodrigues, Ferreira, & Junior, 2017) indicate an ultimate average deposition of 0.05 mg/m² of material on the seabed; with particulate matter deposited within the three-day simulation period. Given the low concentration of the deposition of the material, it is therefore expected that the in-water suspended solids (i.e. turbidity) created by the discharge is not likely to be high for an extended period of time, or over a wide area.

Modelling of larger cement discharges was undertaken by BP (BP, 2013, which is useful as a conservative comparison of the potential impacts from this activity. This modelling was undertaken for significantly larger discharges at surface, i.e. 480 bbl/hr (equivalent to approximately 76 m³/hr) and intermittent surface discharge of cement (following flushing of lines and equipment) in shallower water depths. The BP modelling results provide a high level of conservatism and as such is considered appropriate to apply for this program. The modelling indicates that two hours after the start of discharge, plume concentrations are between 5 to 50 mg/L with the horizontal and vertical extents of the plume approximately 150 m and 10 m respectively (BP, 2013). Four hours after the start of the discharge, the modelling indicates that the plume will have completely dispersed to concentrations of less than 5 mg/L (BP, 2013).

The PBW has foraging habitat overlapping the OAs and the SRW migration BIA also overlaps the OAs. Research data detailing potential impacts from suspended solids to megafauna is scarce, however such megafauna is highly mobile, transitory, and able to avoid the plumes. The area of the turbidity plumes is regarded as a very small percentage of the foraging grounds of protected seabirds such as shearwaters, albatrosses, and petrels.

The environmental receptors with the potential for exposure and considered to be most sensitive to an increase in turbidity include pelagic fish species and plankton found in the area around the well locations. The great white shark breeding and distribution BIAs overlap the OAs.

Suspended sediments greater than 500 mg/L are likely to produce a measurable impact upon larvae of most fish species (Jenkins & McKinnon, 2006). It is also indicated 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.

Neither modelling (De Campos, Paiva, Rodrigues, Ferreira, & Junior, 2017) (BP, 2013) suggests that suspended solids concentrations from a discharge of the cement washing will be at or near levels required to cause an effect on fish or invertebrate larvae.

POTENTIAL TOXICITY

The potential for toxicity is associated with chemicals that are added to the dry cement mix; cement itself is classed as Poses Little or No Risk (PLONOR). Toxicity associated with the discharge of cement is limited to the surface discharge of cement slurry or equipment washings (not surface discharge of dry cement).

Cement additives will be assessed and approved for discharge in accordance with Esso’s Environmental Chemical Discharge Assessment Process (AUGO-EV-PCE-013). The process uses the Offshore Chemical Notification Scheme (OCNS) ranking in conjunction with toxicity, biodegradation, and bioaccumulation data to determine potential impacts to the environment and acceptability of planned discharges. The process is described as part of the Implementation Strategy outlined in Section 8.

Table 6-49 Indicative cement additives

Function	OCNS ranking ¹	
	CHARM	Non-CHARM
Antifoaming agent	Silver	-
Antifoaming agent/foam breaker	Gold/substitution warning	-
Cement	-	E
Cement additive	-	E
Cement retarder	Gold	-
Cement set enhancer	Gold	-
Dispersant	Gold/substitution warning	-
Dye	Gold	-
Expanding agent additive	-	E
Fluid loss additive	Gold	-
Gas migration control	Gold/substitution warning	-
Liquid accelerator	-	E
Liquid trifunctional additive	Gold	-
Lost circulation material	-	E
Low temperature liquid dispersant	Gold/substitution warning	-
Multi-temperature cement retarder	Gold/substitution warning	-
Retarder	-	E
Spacer Additive	Gold/substitution warning	-
Spacer viscosifier	Gold/substitution warning	-

Function	OCNS ranking ¹	
	CHARM	Non-CHARM
Well stimulation chemical	Gold/substitution warning	-

¹ The OCNS uses the Harmonised Mandatory Control Scheme developed through the OSPAR Convention. This ranks chemical products according to Hazard Quotient, calculated using the Chemical Hazard and Risk Management (CHARM) model.

The environmental receptors with the potential to be exposed and most at risk from an increase in toxicity include pelagic fish species and plankton.

6.8.3 Controls

- **CM3:** Chemical discharge assessment process
- **CMP5:** Cementing procedures

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.8.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.8.5 Demonstration of As Low as Reasonably Practicable

Table 6-50 Decision Context and justification

Decision Context A
<p>The impacts of inert discharges such as cement are well known. The practice of discharging cement to the marine environment is a well understood activity both nationally and internationally and good practice is well defined. Industry good practice control measures are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP.</p> <p>The consequence of any impact associated with these discharges was assessed as Consequence Level IV (the lowest level).</p> <p>No objections or claims were raised by relevant persons with regard to the planned discharge of cement.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-51 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical.	✓	CM3: Chemical discharge assessment process	This risk control practice requires that new chemicals (including cement additives) must be approved prior to use. This practice assesses chemicals that have the potential to be discharged to the environment (i.e. not household chemicals) to ensure the lowest toxicity, most biodegradable and least accumulative chemicals are selected which meet the technical requirements of the application.
No overboard discharge of	✓	CMP5: Cementing procedures	The cement jobs are conducted in accordance with the procedures and processes to ensure minimal stock is left over.

Good practice	Adopted	Control	Rationale
unmixed cement (Dry cement).			It is a general industry standard that unmixed cement is not discharged offshore; this has also been applied to this program. There will be no discharge of unmixed cement.

Table 6-52 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Dust recovery system	Collects dust from vent lines of bulk storage silos/tanks and reduces the amount of cement emitted into the environment during pneumatic transport.	If space is available and fitting the equipment feasible (e.g. cyclones mounted on a secondary receiving vessel), the cost of retrofitting this equipment, combined with the additional time required during transfer to unload the collected product and transfer it back to the primary storage vessel, and the potential for costly delays due to blockage of the vent lines is considered to outweigh the benefit gained.	Not adopted
Transfer to other operator	No planned discharge to the marine environment.	The primary option for excess bulk cement is to request the next operator to accept the remaining quantity of cement on board. Whether the next operator will accept the cement remaining on board depends upon factors such as provenance and history of the cement, the period of time that the cement will potentially remain on board until the next operator can utilise it, whether the cement qualities and characteristics are consistent with the next operators cementing requirements, and whether the next operators cementing contractor will accept the use of the remaining cement in its programmed operations. Such factors are not directly within Esso’s control.	Adopted
Transfer of excess cement to other Esso operations	No planned discharge to the marine environment.	In the event that cement cannot be transferred to another operator, retaining cement for other Esso operations will be assessed as the	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>next option given the associated cost savings associated with the re-use of dry bulk products. Note that the cement may not meet the required technical specifications and hence may not be useable.</p>	
<p>Down hole disposal</p>	<p>No planned discharge to the marine environment.</p>	<p>Where cement cannot be used in other Esso operations or transferred to the next operator at the completion of the JUR campaign it will be mixed with seawater and pumped downhole above the last well isolation plug.</p> <p>Feasibility will depend on the amount of space available above the last well isolation plug and volume of remaining excess cement.</p>	<p>Adopted</p>
<p>Transfer of unused dry cement back to vessel for onshore disposal</p>	<p>Transferring the unused dry cement back to the vessel for onshore disposal would eliminate the need to mix and discharge it overboard.</p>	<p>In the event that all other alternative options for disposal have been unsuccessful, Esso will undertake a feasibility analysis of options to transfer product back to shore for onshore disposal.</p> <p>Transferring excess cement onshore requires the product to be sent from the JUR back to a vessel. This process increases the risk of moisture contamination of the product within the lines and tanks of the vessel.</p> <p>This is risk is different to when the cement is transported to the JUR as the cement has not yet been exposed.</p> <p>Any moisture contamination of dry cement product within the vessel has the potential for costly impact to the vessel and therefore is not common in industry.</p> <p>In the event that cement was to be transferred from the rig back to shore, it would be via pneumatic processes from the vessel into a cement bulk trailer. Disposal of cement from this trailer at an</p>	<p>Adopted subject to feasibility and risk assessment completed approximately 6 months prior to the end of the activities.</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>appropriate landfill facility will also require a pneumatic transfer process to get the bulk product out of the tanker. Land fill sites are typically not set up with facilities to handle pressurized delivery of bulk products further complicating the onshore disposal process.</p> <p>This combined with the additional time, vessel logistics and associated GHG emissions required to transfer the cement back to the vessel and then onshore is considered to outweigh the benefit gained. The activity does not intentionally carry excess cement and good management of bulk cement volumes on the JUR will minimize excess cement at the end of P&A activities.</p>	
Disposal of mixed slurry overboard	Minor discharge of excess slurry	<p>In the event that none of the above options for disposal of excess bulk cement are available or feasible, the last option will be to mix the minor quantities of residual cement into a diluted slurry for discharge overboard.</p> <p>Discharge to the marine environment will only occur when there are no other safe or technically feasible options and therefore when ALARP. Esso are contractually required to ensure tanks on JUR are empty prior to demobilization</p>	Adopted

6.8.6 Demonstration of acceptability

Table 6-53 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.

Factor	Demonstration criteria	Criteria met	Rationale
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	No environmental legislation or other requirements were deemed relevant to this particular impact.
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to the discharge of cement but the controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 7-1 objective to evaluate change against an established set of criteria and establish endorsement/approval levels • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning discharge of cement.

6.9 Planned discharge – Subsea

6.9.1 Sources of subsea discharges

Removal of the surface casing and well head, have been identified as resulting in subsea discharges during severing and removing. This may include minor amounts of well bore fluids or brine. Seabed disturbance associated with wellhead cutting is addressed in Section 6.1.

6.9.2 Impacts of subsea discharges

Impacts of planned subsea discharges considered are:

- change in water quality
- change in habitat (and smothering).

6.9.2.1 Change in water quality

Early life stages of fish (embryos, larvae) and other plankton would be most susceptible to the toxic exposure from chemicals in the discharges, as they are less mobile and therefore can become exposed to the plume at the outfall. In the event of mortality of fish larvae and plankton within a plume, these populations are expected to rapidly recover once the activity ceases, and/or when the plume is sufficiently diluted. Plankton have high levels of natural mortality and a rapid replacement rate (UNEP, 1985).

As such, exposure of planktonic communities is not considered to result in significant impacts on population levels of organisms that would affect ecological diversity or productivity within Commonwealth marine areas and therefore is considered to result in an undetectable or limited local degradation of the environment.

Pelagic species are mobile; in a worst-case scenario, it is expected that they would be subjected to low levels of chemicals for a short time if they are present near the discharge plume. As such, transient species are not expected to experience any acute or chronic effects.

Prior to discharge the chemical constituents of all fluids will be assessed using Esso’s Environmental Chemical Discharge Assessment Process (AUGO-EV-PCE-013) (refer to Section 8) which uses the OCNS ranking in conjunction with toxicity, biodegradation and bioaccumulation data to determine potential impacts to the environment and acceptability of planned discharges.

6.9.2.2 Change in habitat and smothering

Given the homogenous seabed environment within the OA, comprising soft sediment benthic communities, the small volume of solid discharge which may settle on the seabed is not expected to result in a significant impact to these communities. The majority of the metal shavings and cuttings are expected to remain in the well and a small percentage is anticipated to be displaced to the seabed.

Any impact will be limited to the immediate vicinity of the wellhead locations and thus the extent of potential impact is considered to be localised. The disturbance may result in the mortality of flora and sessile fauna within this footprint through smothering and potentially the mortality of benthic infauna associated with the habitat. However, the area that will be impacted is small compared with the overall extent of this habitat in the region and consequently, there will be no long-term impact on the diversity and abundance of benthic fauna.

6.9.3 Controls

- **CM3:** Chemical discharge assessment process

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.9.4 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.9.5 Demonstration of As Low as Reasonably Practicable

Table 6-54 Decision Context and justification

Decision Context A
The discharge of brine and inhibited seawater, control fluids and solid discharges from wellhead removal are common with this type of activity, both nationally and internationally.
Given the small volumes released and rapid dispersion and dilution, as well as the absence of sensitive environmental features, the consequence of any impact associated with these subsea discharges is assessed as Consequence Level IV (the lowest level).
No objections or claims were raised by relevant persons with regard to these planned discharges.
Esso believes ALARP Decision Context A should apply.

Table 6-55 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical.	✓	CM3: Chemical discharge assessment process	This risk control practice requires that new chemicals must be approved prior to use. This practice assesses chemicals that have the potential to be discharged to the environment (i.e. not household chemicals) to ensure the lowest toxicity, most biodegradable and least accumulative chemicals are selected which meet the technical requirements of the application.

Table 6-56 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Displace fluid above cement plug to inhibited sea water or weighted brine.	Low to no toxicity to environment.	Operationally feasible.	Adopted

6.9.6 Demonstration of acceptability

Table 6-57 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	Chronic chemical pollution is a recognised threat to the species in the following conservation management plans and advice, however no conservation/management actions are specified in relation to chemical discharges: <ul style="list-style-type: none"> • CMPBW • Conservation Advice for sei whales (TSSC, 2015) • Conservation Advice for fin whales (TSSC, 2015).

Factor	Demonstration criteria	Criteria met	Rationale
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Exxon Mobil Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 7-1 objective to evaluate change against an established set of criteria and establish endorsement/approval levels • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning planned operational discharges.

6.10 Planned discharge – Surface

6.10.1 Sources of surface discharges

The following activities have been identified as resulting in surface discharges:

- circulation of residual fluids in production casing
- circulation of residual fluids in intermediate casing annulus.

A summary of the types of fluids discharged and volumes (per well) is summarised in Table 6-58. The indicative constituents of the P&A fluids (NaCl brine plus additives) are listed in Table 6-59.

Table 6-58 Summary of typical plug and abandonment discharges – Surface

Fluid Type	Nature of discharge (infrequent / continuous etc.)	Indicative volume (per well)
Residual kill weight fluid (sodium chloride (NaCl) brine, with corrosion inhibitor, biocide and oxygen scavenger/‘Baracarb’ (calcium carbonate) pill)	Once per well	215 bbl

Fluid Type	Nature of discharge (infrequent / continuous etc.)	Indicative volume (per well)
Residual water-based muds (seawater, gel, polymer)	Once per well	1660 bbl
NaCl brine (corrosion inhibitor, biocide and oxygen scavenger)	Infrequent – as required	200 bbl
Water-based muds (seawater, gel, polymer)	Infrequent – as required	700 bbl

Table 6-59 Indicative constituents of plug and abandonment fluids

Function	OCNS ranking ¹	
	CHARM	Non-CHARM
Acidity control	-	E
Viscosifier	Gold	-
Biocide	Silver	-
Oxygen scavenger	Gold	-
Brine weighting agent	-	E
Loss circulation material	-	E
Corrosion Inhibitor	Gold	-
Surfactant, cleaning agent	Gold	-
pH control	-	E
Water hardness control agent	-	E
H ₂ S scavenger	Gold	-

¹ The OCNS uses the Harmonised Mandatory Control Scheme developed through the OSPAR Convention. This ranks chemical products according to Hazard Quotient, calculated using the CHARM model.

6.10.2 Minamata Convention on Mercury

The Minamata Convention on Mercury is an international treaty that seeks to protect human health and the environment from emissions and releases of mercury and mercury compounds caused by humans. Australia ratified the convention on the 7th of December 2021. Countries that have ratified the convention are bound to put controls in place to manage the discharges, emissions and disposal of mercury and mercury compounds. In Australia, the convention is regulated via the Recycling and Waste Reduction Act 2020 (Cth). In particular, the Recycling and Waste Reduction (Mandatory Product Stewardship – Mercury-added Products) Rules 2021 made under the Act give effect to Australia’s obligations under Article 4(5) of the Minamata Convention.

Mercury is a highly toxic heavy metal that can harm the immune system, brain, heart, kidney and lungs of humans and animals, and cause serious harm to ecosystems through bioaccumulation. The effects of mercury exposure can occur at very low concentrations. For this activity, the consideration for the Minamata Convention

requirements has been assessed for trace volumes of mercury that may be contained with circulation fluids and water based muds (particularly barite).

As per Table 6-57 there is a potential for use of a water-based mud system during plug and abandonment activities. Consideration for fluid properties such as weight, viscosity and fluid loss characteristics during various stages of the plug and abandonment operations may lead to the requirement to use of a water-based mud system. The rig circulation and solids handling equipment will be used to maintain the mud system and minimise the required volume used in operations. When selecting barite if mud systems are required in this activity, Esso will ensure that the contaminant limit concentrations are at or below a Mercury (Hg) concentration of – 1 mg/kg (1 ppm) dry weight in stock barite as outlined in the Minamata convention.

For residual water-based muds in the well bore, a review of the potential maximum mercury content within the historical drilling fluid was conducted. According to research paper SPE-80571 “Forms of Mercury in Drilling Fluid barite and their fate in the marine environment” mercury concentrations in barite from all sources range from <0.05 – 31ppm with an average of 0.4ppm.

The maximum mud weight of residual muds across the wells included in this activity was reviewed and found to be 11.9ppg (pounds per gallon). Based on calculations for weighting drilling mud it is estimated to have required 185lbs of barite for each bbl of mud, equating to 12.5% of the volume. The maximum mercury content in the highest weighted drilling mud when the wells were drilled is estimated to be 3.9ppm (12.5% of 31ppm) conservatively and more likely to be closer to the average of 0.05ppm (12.5% of 0.4ppm).

In additional it is known that barite will separate from the liquid phase over time and settle into the lower section of a fluid column. All of the residual water-based muds that will be circulated out of the wells in this activity has been in place for more than 20 years and significant barite sag is to be expected. This reduces the expected maximum mercury concentrations further. Recent sampling results from ExxonMobil PNG Angore abandonment operations indicated an average of 50% weight drop due to barite sag in wells <10 years old. Using that estimate of barite sag, the maximum mercury content for the residual mud that will be circulated out is estimated to be 2.0ppm (50% of 3.9ppm) conservatively and more likely to be closer to the average of 0.025ppm (50% of 0.05ppm).

Consideration for testing for mercury content was reviewed and found that infield accurate testing was not available or feasible. Given the low concentrations that were calculated for the maximum potential content within the residual water-based muds, the time and cost impact of collecting samples and waiting for onshore lab testing to be complete was considered disproportional to the risk reduction.

Consideration was also given to the use of solids control equipment (e.g. a centrifuge or alternative) for reducing barite discharges to the marine environment. Given the low concentrations that were calculated for the maximum potential content within the residual water-based muds, the time and cost impact of installing and using a centrifuge for barite removal was considered disproportional to the risk reduction.

6.10.3 Impacts of surface discharges

Impacts of the planned discharge of brines and residual water-based muds considered are:

- change in water quality (increased salinity and potential toxicity in the water column).

6.10.3.1 Change in water quality

POTENTIAL TOXICITY

As these discharges will occur at the surface, it is anticipated that ecological receptors that have the potential to be exposed are those that use the surface waters for transit or foraging such as whales, turtles, fish and plankton. The OA is within a foraging BIA for the PBW.

All fluids will be assessed using Esso’s Environmental Chemical Discharge Assessment Process (AUGO-EV-PCE-013) (refer to Section 8), which uses the OCNS ranking in conjunction with toxicity, biodegradation and bioaccumulation data to determine potential impacts to the environment and acceptability of planned discharges.

Discharges will be one-off or infrequent, and of small volumes which will disperse rapidly in the open ocean currents within the OA. It is therefore expected that any exposure will be limited in duration.

The non-toxic nature of the fluids that will be released (listed in Table 6-44) means that acute or chronic toxicity impacts to fauna, especially immobile benthic fauna will not occur. The lack of toxicity and low bioaccumulation potential of the WBM means that the effects of the discharges are highly localised and are not expected to spread through the food web (Neff, 2010).

Early life stages of fish (embryos, larvae) and other plankton would be most susceptible to the toxic exposure from chemicals in the discharges, as they are less mobile and therefore can become exposed to the plume at the discharge point. However, these are expected to rapidly recover once the activity ceases, as they are known to have high levels of natural mortality and a rapid replacement rate (UNEP, 1985). As such, exposure of planktonic communities is not considered to result in significant impacts on population level of organisms that would affect ecological diversity or productivity within Commonwealth marine areas and therefore is considered to result in an undetectable or limited local degradation of the environment, rapidly returning to original state by natural action.

Pelagic species are mobile; in a worst-case scenario, it is expected that they would be subjected to very low levels of chemicals for a very short time if they are in proximity of the discharge plume. As such, transient species are not expected to experience any acute or chronic effects.

INCREASED SALINITY

Brine water will descend through the water where it will be rapidly mixed with receiving waters and dispersed by ocean currents. As such, any potential impacts are expected to be limited to the source of the discharge where concentrations are highest. This is confirmed by studies that indicate effects from increased salinity on planktonic communities in areas of high mixing and dispersion are generally limited to the point of discharge only (Abdul Azis, et al., 2003).

The receptors with the potential to be exposed to an increase in salinity include pelagic fish species and plankton found in surface waters within the OA. Changes in salinity can affect the ecophysiology of marine organisms. Most marine species are able to tolerate short-term fluctuations in salinity in the order of 20% to 30% (Walker & McComb, 1990). However, larval stages, which are crucial transition periods for marine species, are known to be more susceptible to impacts of increased salinity (Neuparth, Costa, & Costa, 2002). Mobile pelagic species may be subjected to slightly elevated salinity levels (approximately 10 to 15% higher than seawater) for a very short period which they are expected to be able to tolerate.

6.10.4 Controls

- **CM3:** Chemical discharge assessment process
- **CMP6:** Worksite Operations Safety Plan

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.10.5 Residual consequence assessment

With the above controls in place, the residual potential consequence has been determined as:

- **Consequence Level IV**

6.10.6 Demonstration of As Low as Reasonably Practicable

Table 6-60 Decision Context and justification

Decision Context A
<p>The surface discharge of fluids during drilling and well abandonment activities is common for this type of, both nationally and internationally. The release of brines and drilling and completion fluids are standard discharges and are not considered unusual in Commonwealth Waters.</p> <p>The consequence of any impact associated with these discharges was assessed as Consequence Level IV (the lowest level).</p> <p>No objections or claims were raised by relevant persons with regard to the planned operational discharges.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-61 Good practice controls

Good practice	Adopted	Control	Rationale
Discharge of least environmentally hazardous chemical.	✓	CM3: Chemical discharge assessment process	This risk control practice requires that new chemicals must be approved prior to use. This practice assesses chemicals that have the potential to be discharged to the environment (i.e. not household chemicals) to ensure the lowest toxicity, most biodegradable and least accumulative chemicals are selected which meet the technical requirements of the application. This process also assess known chemicals of concern such as: Mercury (Hg), Cadmium (Cd), Pfas, lead and assess their concentration levels.
Reduce oil in water content of circulated fluids/tank washings.	✓	CMP6: Worksite Operations Safety Plan	It is standard practice that the oil in water content of circulated fluids/tank washings will be treated prior to discharge. This process will also remove any other solids prior to discharge.

Table 6-62 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Onshore disposal (fluids)	No planned discharge to the marine environment.	<p>Where possible (for Bream B only), fluids may be directed for onshore disposal via the pipeline network. The Bream A-B pipeline can be accessed only whilst work is being undertaken at the Bream B facility. There is the ability for returning well fluids to be routed from a wellhead connection on the platform through temporary hoses, fixed platform equipment and the JUR choke and kill manifold to the pipeline between Bream B and Bream A. Fluids will then be routed via another pipeline from Bream A to Longford and processed onshore. Technical review of the fluids will be undertaken prior to disposing of them in this manner to ensure they are compatible with the pipelines and onshore process system.</p> <p>Where the pipeline disposal pathway is not available, the fluids will need to be shipped back onshore for disposal. Shipping the fluids back for onshore disposal has inherent environmental and safety risks. These include spill risk from bulk transfers to and from the supply vessel, fuel consumption/air emissions from operating vessels, the increased risk of</p>	Partially adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		vessel collision from additional trips to and from ports and the impacts of onshore waste treatment/disposal. These risks are eliminated with the offshore disposal of these low impact waste streams.	
Onshore disposal (dry bulk solids)	No planned discharge to the marine environment.	There is a potential for use of a water mud system during plug and abandonment activities. As such a quantity of dry bulk barite/bentonite is expected to be kept on the rig for contingency activities. All dry bulk at the end of activities will be returned to shore or passed on to other operators.	Adopted
Re-injection down hole of circulation fluids	No planned discharge to the marine environment.	Downhole fluid disposal is not anticipated to be an option as scope prior to the jack-up rig arriving will include isolating the reservoirs and therefore not allowing re-injection.	Not adopted
Not using water based muds	No planned discharge to the marine environment.	Circulation of fluids is required in order to undertake the P&A activities. WBM is anticipated to exist within the wellbores due to prior drilling operations that will be circulated out. Additional barite-containing water-based muds may be used if required during plug and abandonment activities.	Not adopted
Testing for mercury content of existing well bore fluids	Confirm mercury content to prevent excess mercury discharge	There is currently no test that can be conducted onboard the JUR that would be able to accurately confirm the mercury content. The only available testing would have to be performed by sample and lab analysis that could take up to a week. During this time the JUR P&A activity would have to remain on hold. Given the calculated residual mercury content from the WMB currently in the well bore is below 0.025ppm the cost of waiting to undertake testing is not considered beneficial.	Not adopted
Use of a centrifuge to remove barite	Remove mercury content from barite	Consideration was also given to the use of solids control equipment (e.g. a centrifuge or alternative) for reducing barite discharges to the marine environment. Given the low concentrations that were calculated for the maximum potential content within the residual water-based muds, the time and cost	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		impact of installing and using a centrifuge for barite removal was considered disproportional to the risk reduction.	

6.10.7 Demonstration of acceptability

Table 6-63 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	Chronic chemical pollution is a recognised threat to the species in the following conservation management plans and conservation advice, however no conservation/management actions are specified: <ul style="list-style-type: none"> • CMPBW • <i>Conservation Advice</i> for sei whales (TSSC, 2015) • <i>Conservation Advice</i> for fin whales (TSSC, 2015).
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Exxon Mobil Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> • OIMS System 7-1 objective to evaluate change against an established set of criteria and establish endorsement/approval levels • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning planned operational discharges.

7 Environmental risk assessment

This Chapter describes the outcome of the environmental risk assessment of unplanned events associated with activities described in this EP.

The purpose of the risk assessment is to ensure that all risks associated with the activity are identified and evaluated, and the resulting risks are demonstrated to be reduced to ALARP and acceptable levels in accordance with the Esso impact and risk assessment methodology outlined in Section 5.

Appendix H presents the EPOs, EPSs and measurement criteria required to support the controls identified in this Chapter.

A summary of the risk assessment is included in Table 7-1.

Table 7-1 Summary Risk Assessment

Identifier	Hazard	Inherent Consequence	Residual Consequence	Residual Likelihood	Risk Category
1	Physical interaction – Marine Fauna	III	IV	D	4
2	Physical interaction – Invasive Marine Species	III	IV	D	4
3	Accidental release – Dropped Objects	III	IV	D	4
4	Accidental release – Waste	IV	IV	D	4
5	Accidental release – LoC Hazardous or non-hazardous substances	III	IV	D	4
6	Accidental release – LoC Hazardous of refined oils	III	III	E	4
7	Accidental release – LoC of reservoir hydrocarbons	II	II	E	4

7.1 Physical interaction – Marine fauna

7.1.1 Causes of physical interaction with marine fauna

The movement of support vessels has the potential to result in collision with marine fauna. Note: Within the 500-m PSZs, support vessels will be under a JUR procedure to ensure that vessel handling is undertaken in a safe and controlled manner.

7.1.2 Risks of physical interaction with marine fauna

Interaction with marine fauna has the potential to result in:

- injury/mortality to marine fauna.

7.1.3 Risk assessment

7.1.3.1 Injury/mortality to fauna

Marine megafauna are most at risk from this hazard and thus are the focus of this evaluation.

Several marine turtle species including species listed as either threatened and/or migratory under the EPBC Act may occur within the OAs, however no critical habitat or BIAs for turtles have been identified.

Several marine mammals (e.g. whales, dolphins, seals) including those listed as either threatened and/or migratory under the EPBC Act have the potential to occur within the OAs. The PBW has foraging habitat BIAs overlapping the OAs and the SRW migration BIA also overlaps the OAs.

Cetaceans are naturally inquisitive marine mammals that are often attracted to offshore vessels and facilities. The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when in the vicinity of a vessel, while others are curious and often approach ships that have stopped or are slow moving, although they generally do not approach, and sometimes avoid, faster-moving ships (Richardson, Greene, Malme, & Thomson, 1995).

Although collisions with marine fauna can happen anywhere in Australian waters, the risk of collision is greater in breeding areas and along seasonal migration routes. Collision risk also increases in shallower waters where a vessel has less under-keel clearance, leaving an animal less room to avoid the vessel (AMSA, 2023). Larger 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 travelling faster than 14 knots (Laist, Knowlton, Mead, Collet, & Podesta, 2001). Vessels typically used to support these activities do not have the same limitations on manoeuvrability and would not be moving at these speeds when conducting activities inside the OA.

The Australian and New Zealand fur seals are highly agile species that haul themselves onto rocks and oil and gas platform structures. As such, it is likely that they will avoid any collision with moving support vessels.

Vessel strike data from (1997-2015) for marine species in Australian waters was reviewed and identified the following (Peel, Smith, & Childerhouse, 2016):

- off the Victorian coast there are fewer than 10 records of vessel strikes with whales (historic and modern records)
- whales including the humpback whale (*Megaptera novaeangliae*), PBW, Antarctic blue whale (*Balaenoptera musculus intermedia*), SRW, dwarf minke (*Balaenoptera acutorostrata*), Antarctic minke whale (*Balaenoptera bonaerensis*) fin whale (*Balaenoptera physalus*), Bryde’s whale (*Balaenoptera edeni*), pygmy right whale (*Caperea marginata*), sperm whale (*Physeter macrocephalus*), pygmy sperm whale (*Kogia breviceps*) and pilot whale species were identified as having interacted with vessels. The humpback whale exhibited the highest incidence of interaction followed by the SRW. A number of these species may be observed in the waters within the vicinity of the OAs.
- Dolphins including the Australian humpback (*Sousa sahalensis*), common bottlenose (*Tursiops truncatus* s. str.), Indo-Pacific bottlenose (*Tursiops aduncus*) and Risso’s dolphin (*Grampus griseus*) species were also identified as interacting with vessels. The common bottlenose dolphin exhibited the highest incidence of interaction. A number of these species may be observed within the vicinity of the OAs.
- There were no vessel interaction reports during the period for either the Australian or New Zealand fur seal. There have been incidents of seals being injured by boat propellers, however all indications are rather than ‘boat strike’ these can be attributed to be the seal interacting/playing with a boat, with experts indicating the incidence of boat strike for seals is very low.

If a fauna strike occurred and resulted in death, it is not expected that it would have a detrimental effect on the overall population. Consequently, the potential consequence from fauna strike is considered to be Consequence Level III as this type of event may result in a localised, short-term impact to species of recognised conservation value but is not expected to affect the population or local ecosystem function.

Due to the restricted area of operation PSZs and the slow speed of support vessels when operating in this area, if contact is made with species, the impact due to vessel strike is expected to be non-life threatening and the likelihood of vessel strike and associated severe injury or death of an individual is considered Likelihood Category E (very highly unlikely) during these activities. While there is the potential for mammals such as dolphins and seals to interact and be playful with slow moving vessels or vessels in DP mode, the likelihood of such interactions causing severe injury or death of an individual is considered Likelihood Category D (very unlikely) during these activities.

7.1.4 Residual risk ranking

Table 7-2 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
III	D	4

7.1.5 Controls

- **CM8:** Vessel Master

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.1.6 Demonstration of As Low as Reasonably Practicable

Table 7-3 Decision Context and justification

Decision Context B
<p>Offshore petroleum operations are widely undertaken both locally, nationally and internationally.</p> <p>The risk of cetacean vessel strike is well managed via legislative control measures that are considered industry best practice. These controls are well understood and implemented by the industry. However, these legislative controls do not entirely eliminate the risk of death or injury to seals via interaction with vessels.</p> <p>The consequence of any impact associated with a vessel strike was assessed as Consequence Level III.</p> <p>No objections or concerns were raised by relevant persons with regard to the risk of physical interaction with marine fauna.</p> <p>Esso believes ALARP Decision Context B should apply.</p>

Table 7-4 Good practice controls

Good practice	Adopted	Control	Rationale
<p>Part 8 Division 8.1 of the EPBC Regulations.</p> <p><i>Australian National Guidelines for Whale and Dolphin Watching 2017</i> (Commonwealth of Australia, 2017).</p>	✓	<p>CM8: Vessel Master</p>	<p>The Vessel Master has responsibility for ensuring the requirements of these Regulations and Guidelines are followed.</p> <p>The Guidelines describe strategies to ensure whales and dolphins are not harmed during offshore interactions with people.</p> <p>These Guidelines were developed jointly by all state and territory governments through the Natural Resource Management Ministerial Council and, although more relevant for tourism activities, provide a list of requirements that are generally adopted by the oil and gas industry to minimise the risk of cetacean strike occurring.</p> <p>Note: Both the lack of visibility of seals in the water and number of seals in close proximity to oil and gas offshore installations make applicability of these guidelines to seals impracticable. Furthermore, fauna interaction management actions as described in the guidelines will not prevent seals approaching/playing with vessels.</p>

Table 7-5 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Grates on vessel thrusters	Grates on vessel tunnel thrusters would prevent entrapment of marine mammals, in particular	Smaller support vessels (such as those used to deploy ROVs) do not generally	Not adopted**

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	seals which are known to approach/play with vessels while stationary on DP.	<p>have grates on tunnel thrusters, however it is more common for larger PSVs.</p> <p>Adding grates to thrusters significantly impacts efficiency of vessels leading to increased fuel usage and air emissions, particularly for small vessels. Further, grates lead to increased potential for marine growth (which further reduces efficiency of thrusters).</p> <p>Retrofitting of grates to vessels requires dry docking at significant cost.</p>	

** Bow thruster guards are not a mandatory requirement for vessels on this activity. However, where a vessel without thruster guards is planned to be used for the activity and is required to dry dock for IMS inspection or cleaning, the additional fitment of thruster guards shall be considered as part of the docking process. As part of this consideration, a risk assessment will be completed to consider additional hazards that could be introduced to the vessel (including failure of the thruster guard and ingestion into the thruster, or hull damage due to guard failure). With the agreement of the vessel owner and where the assessment shows that there is no additional risk, the opportunity will be taken to install bow thruster guards while the vessel is in dry dock.

7.1.7 Demonstration of acceptability

Table 7-6 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>Requirements of the EPBC Regulations – Part 8 Division 8.1: Interacting with cetaceans, although more relevant for tourism activities, have been adopted.</p> <p>Vessel disturbance is a recognised threat to the species in the following conservation management plans and advice. The proposed controls are consistent with conservation/management actions in:</p>

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> • CMPBW • <i>Conservation Advice</i> for humpback whales (TSSC, 2015) • National Recovery Plan for the Southern Right Whale (DCCEEW, 2024)<i>Conservation Advice</i> for sei whales (TSSC, 2015) • <i>Conservation Advice</i> for fin whales (TSSC, 2015) • <i>Recovery Plan for Marine Turtles in Australia 2017-2027</i> (DoEE, 2017) • <i>Conservation Advice</i> for leatherback turtles (TSSC, 2008).
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil Environmental Standards.	✓	There is no specific Environmental Standard which addresses interaction with marine fauna but the controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No concerns have been raised in relation to impacts to marine fauna.

7.2 Physical interaction – Introduction of Invasive Marine Species

7.2.1 Causes of physical interaction with Invasive Marine Species

An IMS is a species occurring, as a result of human activities, beyond its accepted normal distribution and which threatens valued environmental, agricultural or other social resource by the damage it causes (DCCEEW, 2022). Not all non-indigenous marine species introduced into new environments will cause demonstrable effects, some are relatively benign, and few have spread widely beyond ports and harbours.

The following activities have the potential to result in the introduction of IMS in the activity area:

- discharge of ballast water from support vessels containing foreign species
- translocation of foreign species through biofouling of the JUR and support vessel hull and niches (e.g. sea chests, bilges, strainers).

7.2.2 Risks of introduction of Invasive Marine Species

The translocation of IMS through biofouling or ballast water discharge has the potential to result in effects to seabed habitat and marine ecosystems due to:

- change in ecosystem dynamics.

7.2.3 Risk assessment

7.2.3.1 Change in ecosystem dynamics

Successful IMS invasion requires the following three steps:

- colonisation and establishment of the marine pest on a vector (e.g. vessel hull) in a donor region (e.g. home port)
- survival of the settled marine species on the vector during the voyage from the donor to the recipient region (e.g. activity area)
- colonisation (e.g. dislodgement or reproduction) of the marine species in the recipient region, followed by successful establishment of a viable new local population.

It is estimated that there are more than 250 exotic species in the Australian marine environment and that about one in six introduced marine species become ‘pests’ (i.e. the effects of the introduced organisms are sufficiently severe) (DCCEEW, 2022).

Over 100 exotic marine species are known to have become established in Victorian marine waters (Hewitt, et al., 2004). Some have become marine pests. The most concerning marine pest species in Victoria (Parks Victoria, 2023) include:

- Northern pacific seastar (*Asterias amurensis*)
- Wakame (*Undaria pinnatifida*)
- Pacific oyster (*Crassostrea gigas*)
- green shore crab (*Carcinus maenus*)
- European fan worm (*Sabella spallanzanii*)
- New Zealand screw shell (*Maoricolpus roseus*).

These species are largely known to occur in and around port areas. The New Zealand screw shell however is known to have become established in vast beds in Bass Strait and off the coasts of eastern and northern Tasmania, Victoria and New South Wales (MESA, 2023). Figure 7-1 shows the current known distribution of the New Zealand screw shell.

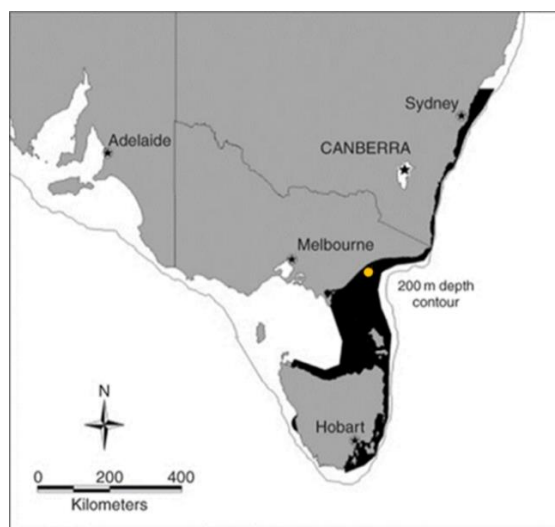


Figure 7-1 Current known distribution (in black) of New Zealand screw shell in Australian waters (Environment Australia, 2003)

Marine Management Plans for Victorian Marine National Parks and Marine Sanctuaries (e.g. Beware Reef Marine Sanctuary and Point Hicks Marine National Park) acknowledge that New Zealand screw shell is established in Bass Strait and note the possibility of the occurrence of this species within soft sediment habitats in the parks or sanctuaries (Parks Victoria, 2006). The Ninety Mile Beach Marine National Park Management Plan (Parks Victoria, 2006c) notes that due to the park's inaccessibility and associated difficulty in conducting regular, detailed surveys, incursions of marine pests are unlikely to be detected until they are fully established and beyond potential control.

IMS are likely to have little or no natural competition or predators, thus potentially outcompeting native species for food or space, preying on native species, or changing the nature of the environment.

Marine pest species can also 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 seastar (*Asterias amurensis*) in Victorian and Tasmanian waters was linked to a decline in scallop fisheries (Dommissie & Hough, 2004). Similarly, the New Zealand screw shell thought to have been introduced on dry ballast or through the live oyster trade, may threaten other mollusc species, including scallops. The New Zealand screw shell can densely blanket the sea floor with live and dead shells, and faecal pellets and therefore also smother other seafloor species (ABC Science, 2000).

Marine pests can also damage marine and industrial infrastructure, such as encrusting jetties and marinas or blocking industrial water intake pipes. By building up on vessel hulls, they can slow the vessels down and increase fuel consumption.

The benthic habitat within the OAs is characterised by a soft sediment and shell/rubble seabed, infauna communities, and sparse epibiotic communities (typically sponges). The nearest area of higher value or sensitivity, the Ninety Mile Beach Marine National Park on the Victorian coast, is located more than 15 km's inshore from the OAs.

Once established, some pests can be difficult to eradicate (Hewitt, et al., 2004) and therefore there is the potential for a long-term or persistent change in habitat structure. It has been found that highly disturbed environments (such as marinas) are more susceptible to colonisation than open-water environments, where the number of dilutions and the degree of dispersal are high (Paulay, Kirkendale, Lambert, & Meyer, 2002).

If an IMS was introduced, and if it did colonise an area, it is expected that any colony would remain fragmented and isolated, and only within the vicinity of the wells (i.e. it would not be able to propagate to nearshore environments, and protected marine areas present in the wider region). Therefore, there is the potential for a localised, but irreversible, impact to habitat resulting in a Consequence Level III.

SUPPORT VESSEL OPERATIONS

Support vessels may pose a risk of introducing IMS through ballast water and hull biofouling. Compliance with regulatory requirements for the management of ballast water and ensuring all vessels are assessed as posing a low biofouling risk through the screening via Esso's IMS Risk Assessment Procedure (AUGO-EV-PCE-014) and in accordance with national guidelines will significantly reduce the likelihood of translocation of an IMS into Bass Strait. Similarly, the risk of secondary translocation through operational movements in Bass Strait is considered in Esso's IMS Risk Assessment Procedure (AUGO-EV-PCE-014) for vessels intended to be used for the activity ensuring that low biofouling risk is posed through vessel movement.

BRINGING THE JUR TO BASS STRAIT

Compliance with regulatory requirements for the management of ballast water and ensuring all vessels are assessed as posing a low biofouling risk through screening via Esso's IMS Risk Assessment Procedure (AUGO-EV-PCE-014) and in accordance with national guidelines will significantly reduce the likelihood of translocation of an IMS. Successful colonisation in the recipient region would be difficult given the nature of the benthic habitats near the OA (i.e. predominantly bare sands with patchy occurrences of hard substrate), and waters generally deeper (with a range of 36 to 91 m) than those of shallower coastal waters where the risk of IMS establishment is considered greatest (BRS, 2007).

It is considered Likelihood Category D (very unlikely) that this activity would result in the introduction of an IMS and any subsequent impact to receptors.

MOVEMENT OF THE JUR BETWEEN ACTIVITY LOCATIONS

There is a risk of secondary translocation between activity locations within Bass Strait as the JUR moves from one activity location to the next. Therefore, the risk of further spreading between activity locations must be considered.

As described in Appendix A Section 1.41 and 1.4.10, the New Zealand screw shells are suspension feeders and are restricted to the seabed surface. Unlike most biofouling organisms, they do not settle on and attach to hard surfaces, and so would be loosely attached, and their presence only incidental. When the JUR departs from a drilling location, a fixed water jet system is activated on top and bottom surfaces of the spud cans to aid dislodgement and lifting of the spud cans off the seafloor. This also has the effect of removing sediment from the spud cans. As the legs are retracted, the movement through the water will dislodge further sediment, as will the forward movement of the JUR during the tow, as the spud cans and lower part of the legs remain in the water at full retraction meaning that only sediment (and associated incidental New Zealand Screw Shells) in protected niches on the legs and spud cans would be translocated to the next location.

It is known that the New Zealand screw shell is established in Bass Strait (Figure 7-1), and given natural distribution of larvae would have most likely already spread the species to suitable habitats, it is considered Likelihood Category D (very unlikely) that this activity would result in translocating/further spreading of IMS between activity locations.

7.2.4 Residual risk ranking

Table 7-7 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
III	D	4

7.2.5 Controls

- **CM23:** Ballast Water Management Plan
- **CM24:** Ballast Water Management Certificate
- **CMP7:** Ballast water record system
- **CM25:** Biosecurity clearance when entering Australian territory
- **CM8:** Vessel Master
- **CM26:** Invasive Marine Species Risk Assessment Procedure
- **CMP8:** Immersible retrievable equipment cleaning

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.2.6 Demonstration of As Low as Reasonably Practicable

Table 7-8 Decision Context and justification

Decision Context B
<p>The causes resulting in an introduction of IMS from ballast water discharge or biofouling are well understood and well managed by national and international regulations and industry guidance. Esso is experienced in the implementation of industry requirements through their existing ongoing operations.</p> <p>Given the potential for an irreversible (although localised) effect on the benthic habitat, there is the potential for Consequence Level III impacts.</p> <p>No issues, objections or claims were raised by relevant persons with regard to the risk of introduction of IMS.</p> <p>Based on the Consequence Level III rating, Esso believes ALARP Decision Context B should apply.</p>

Table 7-9 Good practice controls

Good practice	Adopted	Control	Rationale
Ballast Water Management (BWM) Convention	✓	<p>CM23Ballast water management plan</p> <p>CM24: Ballast Water Management Certificate</p> <p>CMP7: Ballast water record system</p>	<p>The BWM Convention requires signatory flag states to ensure that ships flagged by them comply with standards and procedures for the management and control of ships’ ballast water and sediments. The BWM Convention aims to prevent the spread of harmful aquatic organisms from one region to another and halt damage to the marine environment from ballast water discharge, by minimising the uptake and subsequent discharge of sediments and organisms.</p> <p>The BWM Convention requires all vessels designed to carry ballast water to implement a ballast water management plan and to carry out ballast water management procedures in accordance with approved methods. Specifically, these are:</p> <ul style="list-style-type: none"> • use of a ballast water management system • ballast water exchange in an acceptable area (at least 12nm from land and in at least 50m water depth) • use of low-risk ballast water • retention of high-risk ballast water on board • discharge to an approved ballast water reception facility. <p>A management certificate is required for all vessels to which the BWM Convention applies, this certificate verifies that the vessel has been surveyed to a standard compliant with the BWM Convention.</p> <p>All vessels that carry ballast water must maintain a ballast water record system.</p>
Maritime arrivals reporting system	✓	<p>CM25: Biosecurity clearance when entering Australian territory</p>	<p>The Vessel Master has responsibility for ensuring a pre-arrival report is submitted in Maritime Arrivals Reporting System and clearance to enter Australian territory is obtained from the Department of Agriculture and Water Resources (DAWR).</p> <p>Offshore installations operating outside of Australian territory are not under the jurisdiction of the <i>Biosecurity Act 2015</i>. However, any conveyance (vessel or aircraft) which leaves Australian territory and is not subject to biosecurity control, and which interacts with an installation (or other conveyance) outside of the Australian territory will become an ‘exposed conveyance’.</p> <p>A conveyance becomes exposed by being in physical contact with, in close proximity to or being contaminated by the installation or another conveyance. When the exposed conveyance</p>

Good practice	Adopted	Control	Rationale
			<p>returns to Australian territory, it becomes subject to biosecurity control and it must complete a pre-arrival report and notify if it intends to unload goods, unless exempt under the Biosecurity (Exposed conveyance – exceptions from biosecurity control) Determination 2016.</p>
<p><i>Australian Ballast Water Management Requirements, Version 8 (DAWE, 2020)</i></p>	<p>✓</p>	<p>CM8: Vessel Master</p>	<p>The Vessel Master has responsibility for ensuring these Requirements are followed.</p> <p>The Requirements describe the obligations on vessel operators with regards to the management of ballast water and sediments when operating in Australian seas.</p> <p>The acceptable area for a ballast water exchange between an offshore oil and gas installation and an Australian port is in areas that are no closer than 500 m from the offshore installation and no closer than 12 nm from the nearest land.</p>
<p><i>Australian biofouling management requirements (Version 1.) (DAWE, 2022)</i></p>	<p>✓</p>	<p>CM26: Invasive Marine Species Risk Assessment Procedure</p>	<p>Biofouling risk in accordance with <i>Australian biofouling management requirements (Version 1.) (DAWE, 2022)</i> is assessed and documented through Esso’s IMS Risk Assessment Procedure (AUGO-EV-PCE-014).</p> <p>Consistent with the ‘best practice’ approach set out in the IMO Guidelines for the Management of Ships Biofouling the risk assessment considers many parameters of the vessel or JUR including (where relevant):</p> <ul style="list-style-type: none"> • transport method (dry verses wet haulage) • presence and age of antifouling coating • evidence of in-water inspection by divers or inspection in dry dock and cleaning of hull • presence and operation of internal seawater treatment systems if applicable • duration of stay in overseas or interstate coastal waters • location of drilling operations (OA), timings and durations. <p>Where the initial indicative assessment (conducted by an IMS Expert and/or via the online Vessel Check portal (www.vessel-check.com)) results in ‘Low Risk’, the risk assessment is provided to the Principal Officer IMS, Department of Jobs, Precincts and Regions. If the Principal Officer is satisfied that no further action is necessary following this consultation the vessel or JUR is deemed acceptable for use.</p> <p>If the risk assessment result is uncertain or high risk, or further action is recommended by the Principal</p>

Good practice	Adopted	Control	Rationale
			<p>Officer, an IMS Expert is consulted to determine whether additional controls can be implemented to reduce the vessel risk status to 'Low Risk'.</p> <p>Examples of potential control/mitigation measures to reduce risk that may be proposed are consistent with the Australian biofouling management requirements (DAWE, 2022) and the IMO Guidelines. The control measures proposed must meet the standard of performance described in IMS Risk Assessment Procedure (AUGO-EV-PCE-014).</p> <p>Following implementation of these mitigation measures, the IMS Expert is consulted to reassess the level of risk for the activity and determine whether the level of risk for the activity is 'Low Risk' and meets the ALARP and Acceptability criteria (Sections 5.6 and 5.7).</p> <p>If this process still results in an uncertain or higher risk then an alternative vessel or JUR must be sought for the activity.</p>
Removal of sediment from spud cans	✓	CMP8: Immersible retrievable equipment cleaning	Management of submersible equipment will be in accordance with the Australian biofouling management requirements for the Petroleum Production and Exploration Industry (DAWE, 2022).

Table 7-10 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Use of freshwater ballast	By using freshwater ballast, the likelihood of introducing an IMS can be reduced. However, because the likelihood of the consequence is already low (see above), there is limited environmental benefit associated with implementing this measure.	Costs associated with this measure are high, and disproportionate to the benefit.	Not adopted
Use only vessels that are currently operating in Bass Strait to reduce the potential for introduction of IMS	By only using vessels that are currently operating in Bass Strait, the likelihood of introducing an IMS can be reduced. However, because the likelihood of the consequences is already low (see above), there is limited environmental	Limiting vessel selection to use of those currently operating in Bass Strait could potentially pose a significant risk in terms of time and duration for sourcing a vessel, as well as the ability of those chosen to perform the required tasks. This potential cost (and time required) is grossly disproportionate to the minor environmental gain (of reducing the potential likelihood of IMS introduction)	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	benefit associated with implementing this measure.	achieved and is not reasonably practicable.	
Inspect and clean all vessels	By dry docking and cleaning all wetted surfaces on all vessels the likelihood of a pest relocation is considerably lowered.	The risk already has a low likelihood so the substantial cost (and time required) to inspect and clean all vessels outweighs the environmental benefit.	Not adopted
Dry tow JUR between activity locations	Dry tow would increase the likelihood of dehydration of the IMS on the vector and therefore reduce the risk of survivability and colonisation at the next location.	<p>Dry tow requires a Heavy Lift Vessel (HLV) which is not needed for wet tow. The JUR would need to be welded/secured to the HLV for the tow. The use of a HLV and additional time taken to load, weld/secure, move, remove welds, unload has substantial costs associated with it.</p> <p>This cost far outweighs the environmental benefit.</p>	Not adopted

7.2.7 Demonstration of acceptability

Table 7-11 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	The risk ranking is Risk Category 4 (the lowest category) and is therefore considered acceptable.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	<p>Although the habitat with the potential to be impacted is characterised by soft sediment communities, because of the potential for irreversible impacts, this aspect is considered as having the potential to (although very unlikely) result in serious or irreversible environmental damage.</p> <p>Therefore, further evaluation against the remaining Principles of ESD is required. There is little uncertainty associated with this aspect as the activities are well understood, the cause pathways are well known, and activities are well regulated and managed.</p>

Factor	Demonstration criteria	Criteria met	Rationale
			It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of the BWM Convention have been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of the BWM Convention in Australia:</p> <ul style="list-style-type: none"> • <i>Biosecurity Act 2015</i> • <i>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</i> • <i>Marine Order 98 (Marine pollution – anti-fouling systems) 2013.</i> <p>Australian BWM Requirements will be adhered to and measures for managing ballast water discharges in this document are incorporated in the controls.</p> <p>Biofouling risk is assessed, and mitigated, in accordance with the <i>National Biofouling Guidelines for the Petroleum Production and Exploration Industry</i> (DAWE, 2022).</p>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the risk of introduction of IMS.

7.3 Accidental release – Dropped objects

7.3.1 Causes of dropped objects

Dropped objects may be released by accidentally dropping objects (e.g. small tools (such as spanners) or equipment (such as clamps), cargo loads (such as bulk chemical containers or chemical wastes), recovered infrastructure (such as wellheads and protruding casing) overboard from the JUR or support vessels, or during ROV operations, due to human error, equipment failure or adverse weather. Accidental release of dropped objects has the potential to result in damage to, and potential hydrocarbon releases from, live or non-producing subsea infrastructure.

The dropped objects risk assessment that was undertaken has identified a low probability for loss of containment (LOC) from subsea infrastructure due to dropped objects associated with this activity based on several factors including the activity location in relation to existing infrastructure, positioning of the JUR and impact energies of dropped objects. Bream B was the only location identified with subsea infrastructure containing residual hydrocarbons within the Bream B to Bream A pipeline. Due to the platform being shut-in and planned flushing work prior to the commencement of JUR scope it is known the pipeline will contain a high water content fluid. For the remaining locations, the risk for loss of containment (LOC) due to dropped objects was not considered credible. The five subsea locations do not have any infrastructure other than the existing wellheads and wells currently have no known paths for hydrocarbons to flow to surface. The pipelines at Perch and Dolphin have been flushed with inhibited sea water.

Pre-inspection survey and pre-positioning and mobilisation route planning, will identify the location of pipelines in the area and ensures that the JUR can be safely brought into position away from this infrastructure. Risks of dropped objects

The accidental release of dropped objects has the potential to result in:

- change in habitat
- change in water quality.

7.3.2 Risk assessment

7.3.2.1 Change in habitat

In the unlikely event of an accidental dropped object from either the JUR or support vessels, or during ROV operations, effects will be limited to localised physical disturbance to benthic communities arising from equipment sinking to and dragging across the seabed. Any environmental impact caused by damage to small areas of seabed and associated communities would be mitigated by ubiquitous distribution of similar habitat in the region.

Severity of impact to benthic communities is affected by density of biota, sensitivity of biota to disturbance and recovery potential of benthic communities. Physical disturbance to the seabed from a dropped load would be limited to the footprint of the load (estimated at less than or equal to 10 m²) and temporary in nature if the item was retrieved and long term if irretrievable. Both are likely to pose minor environmental risk as the seabed within the OA is largely sandy sediment with benthic assemblages (predominantly polychaetes (worms), crustaceans and molluscs) and not particularly susceptible to physical disturbance.

Wastes such as paint cans containing paint residue, batteries and so forth, would settle on the seabed if dropped overboard. Over time, this may result in the leaching of chemicals to the seabed resulting in a small area of substrate becoming toxic and unsuitable for colonisation by benthic fauna. Given the low release volumes it is expected that only very small areas of benthic habitat would be affected.

Considering the possible footprint of a dropped object (against the total area of similar habitat within the Bass Strait region) it is highly unlikely that a dropped object would have an effect on any benthic community other than a minor and localised one resulting in a Consequence Level IV.

7.3.2.2 Change in water quality

Impacts from a chemical release during crane transfer of bulk chemical containers – with the maximum volume based upon the loss of an intermediate bulk container one m³– would be minimal, due to the small potential volumes released, and the fact that spilled chemicals will rapidly evaporate, disperse and weather. In the open ocean environment, the spilled liquids would be rapidly dispersed and diluted to concentrations at which they are non-toxic resulting in a Consequence Level IV.

The greater risk to benthic habitat is if a cargo load or subsea equipment is dropped during lifting. However, given the controls in place it is considered Likelihood Category D (very unlikely) that such a dropped object would result in the impacts described above.

7.3.3 Residual risk ranking

Table 7-12 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.3.4 Controls

- **CMP1:** Pre-activity site Inspection
- **CMP20:** JUR Rig Move Procedure
- **CM18:** Preventative Maintenance System
- **CM19:** Cargo Securing Manual
- **CMP11:** JUR Move Guidance Checklist

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.3.5 Demonstration of As Low as Reasonably Practicable

Table 7-13 Decision Context and justification

Decision Context A
<p>The use of cranes and other lifting equipment to handle equipment and materials offshore is well practiced. There is a good understanding of potential dropped object sources, and the control measures required to manage these. Furthermore, the associated safety risks mean that these activities are well managed.</p> <p>There is little uncertainty associated with the potential environmental impacts which have been evaluated as Consequence Level IV (the lowest level).</p> <p>No issues, objections or concerns were raised by relevant persons during the consultation process with regard to the risk of dropped objects.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 7-14 Good practice controls

Good practice	Adopted	Control	Rationale
American Petroleum Industry (API) Recommended Practice (RP) 2D	✓	CMP1: Pre-activity site inspection	API RP 2D are industry-developed requirements which provide guidance in the development of operating and maintenance procedures for use in the safe operation of cranes on fixed or floating offshore platforms. The JUR holds Cargo Gear Certificates which certify that the deck cranes and accessory gear are compliant with API RP 2D (refer to <i>J-107 Safety Case</i> (Valaris, 2021)).
Maintenance of lifting gear	✓	CM18: Preventative Maintenance System	It is industry good practice that a Preventative Maintenance System (PMS) is in place to ensure that the lifting gear continues to operate at the required standard.

Good practice	Adopted	Control	Rationale
SOLAS Chapter VI Carriage of Cargoes and Chapter VII Carriage of Dangerous Goods (SOLAS, 1974).	✓	CM19: Cargo Securing Manual CMP11: JUR Move Guidance Checklist	SOLAS sets minimum safety standards in the construction, equipment and operation of merchant ships. In accordance with Regulations VI/5 and VII/5 of the SOLAS, cargo units and cargo transport units will be loaded, stowed and secured throughout the voyage in accordance with the approved Cargo Securing Manual (as appropriate to vessel class).

Table 7-15 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

7.3.6 Demonstration of acceptability

Table 7-16 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	The proposed activities outlined in this EP align with the requirements of the OPGGS Act: <ul style="list-style-type: none"> • Section 280(2) - No interference with the conservation of the resources of the sea and seabed to a greater extent than is necessary for the exercise of the rights conferred by titles granted. • Schedule 3 (occupational health and safety) of the OPGGS Act and OPGGS (Safety) Regulations – Require the operator of each offshore facility to prepare a Safety Case for submission to NOPSEMA including

Factor	Demonstration criteria	Criteria met	Rationale
			assessment and controls to manage significant risks associated with dropped objects. Activities at a facility must be conducted in accordance with a Safety Case that has been accepted by NOPSEMA. The requirements of SOLAS Chapters VI and VII, in relation to a Cargo Securing Manual, have also been adopted.
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	Proposed activities meet: <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8-1 objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the risk of dropped objects.

7.4 Accidental release – Waste

7.4.1 Causes of accidental release of waste

The handling and storage of materials and waste on board the JUR and support vessels has the potential for accidental over-boarding of hazardous/non-hazardous materials and waste. Small quantities of hazardous/non-hazardous materials (solids and liquids) will be used and wastes created, and then handled and stored on board until transferred to port facilities for disposal at licenced onshore facilities. However, accidental releases to sea are a possibility, such as in rough ocean conditions when items may roll off or be blown off the deck.

The JUR uses separate clearly identified cans, drums, boxes, bags or other containers for short-term (disposable garbage) and trip-long (non-disposable garbage) storage. Short-term storage would be appropriate for holding otherwise disposable garbage while a ship is passing through a restricted discharge area. The JUR has the following procedure in place as outlined in Section 2.3.6.2 of the *J-107 Safety Case* (Valaris, 2021).

The waste management procedure addressed the following topics:

- compliance requirements
- waste identification and classification
- waste registration and reporting
- waste storage and separation
- signage, labelling and placarding
- waste inspections
- waste handling
- waste transportation
- communication and training.

The following non-hazardous materials and wastes will be disposed of to shore, but have the potential to be accidentally dropped or released overboard:

- paper and cardboard
- wooden pallets
- scrap steel, metal, aluminium, cans
- glass
- plastics.

The following hazardous materials may be used and waste generated through the use of consumable products and will be disposed to shore, but may be accidentally dropped or released overboard:

- hydrocarbons, hydraulic oils and lubricants
- hydrocarbon-contaminated materials (e.g. oily rags, pipe dope, oil filters)
- batteries, empty paint cans, aerosol cans, fluorescent tubes, printer cartridges
- contaminated personal protective equipment
- acids and solvents (laboratory wastes).

7.4.1.1 Injury/mortality to fauna

Discharged overboard, wastes can cause injury or death to marine fauna or seabirds through ingestion or entanglement (e.g. plastics caught around the necks of seals or ingested by seabirds, fish or cetaceans). Several marine mammals (e.g. whales, dolphins, seals), marine reptiles and fish including those listed as either threatened and/or migratory under the EPBC Act have the potential to occur within the OA. The PBW has foraging BIA overlapping the OAs and the SRW migration BIA also overlaps the OAs. The great white shark breeding and distribution BIAs overlap the OAs.

Most records of impacts of plastic debris on wildlife relate to entanglement, rather than ingestion. However, the rate of ingestion of plastic debris by marine wildlife is difficult to assess as not all dead animals are necropsied or ingested plastic debris may not be recorded where it is not considered as the primary cause of death.

The patterns of reports of entanglement in and ingestion of plastic debris by wildlife in Australian waters are likely to be influenced by factors such as the size and distribution of populations, foraging areas, migration patterns, diets, proximity of species to urban centres, changes in fisheries equipment and practices, weather patterns, and ocean currents, as well as the frequency of monitoring and/or observation of wildlife. Species dominating existing entanglement and ingestion records are turtles and humpback whales. Australian pelicans and a number of cormorant species are also frequently reported (Ceccarelli, 2009).

7.4.1.2 Change in habitat

Hazardous wastes released to the sea can cause pollution and contamination, with either direct or indirect effects on marine organisms. For example, chemical residues (depending on the volumes released) can impact on marine life from plankton to pelagic fish communities, causing physiological damage through ingestion or absorption through the skin. Impacts from a minor accidental release would be limited to the immediate area surrounding the release, prior to the dilution of the chemical with the surrounding seawater. In an open ocean environment such as the OA, it is expected that any release would be rapidly diluted and dispersed, and thus temporary and localised.

Solid hazardous wastes, such as paint cans containing paint residue, batteries and so forth, would settle on the seabed if dropped overboard. Over time, this may result in the leaching of hazardous materials to the seabed,

which is likely to result in a small area of substrate becoming toxic and unsuitable for colonisation by benthic fauna. The benthic habitats of the area are broadly similar to those elsewhere in the region, so impacts to very localised areas of seabed will not result in the long-term loss of benthic habitat or species diversity or abundance.

Given the restricted exposures and limited quantity of marine pollution expected from this program, it is expected that any impacts from marine pollution may be Consequence Level IV resulting from a localised short-term impact to species of recognised conservation value but not affecting local ecosystem functioning.

The likelihood of an accidental release of waste resulting in these impacts is considered to be Likelihood Category D (very unlikely).

7.4.2 Risk of accidental releases of waste

The potential environmental impacts associated with the accidental release of waste are:

- injury/mortality to fauna
- change in habitat.

7.4.3 Residual risk ranking

Table 7-17 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.4.4 Controls

- **CM9:** Class certification
- **CMP12:** Garbage Management Plan

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.4.5 Demonstration of As Low as Reasonably Practicable

Table 7-18 Decision Context and justification

Decision Context A
<p>The risk of accidental release of waste is well regulated via various treaties and legislation, both nationally and internationally, which specify industry best practice control measures. These are well understood and implemented by the industry.</p> <p>There is little uncertainty associated with the potential environmental impacts of this risk and the consequence of any impact was assessed as Consequence Level IV (the lowest level).</p> <p>No objections or claims raised by relevant persons during the consultation for the campaign with regard to risk of accidental release of waste.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 7-19 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex V Prevention of Pollution from Garbage from Ships.	✓	CM9: Class certification	The vast majority of commercial ships are built to and surveyed for compliance with the standards laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988

Good practice	Adopted	Control	Rationale
			<p>Protocol to the International Convention on Load Lines and the MARPOL.</p> <p>A vessel built in accordance with the applicable Rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those Rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships specifically requires vessels (as appropriate to class) to have a garbage management plan and garbage record book in place and implemented.</p>

Table 7-20 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

7.4.6 Demonstration of acceptability

Table 7-21 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The proposed activities outlined in this EP align with the requirements of the OPGGS Act:</p> <ul style="list-style-type: none"> Section 280(2) – no interference with the conservation of the resources of the sea and

Factor	Demonstration criteria	Criteria met	Rationale
			<p>seabed to a greater extent than is necessary for the exercise of the rights conferred by titles granted.</p> <p>The requirements of SOLAS Chapters VI and VII, in relation to a Cargo Securing Manual, have also been adopted.</p>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8-1 objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the accidental release of waste.

7.5 Accidental release – Loss of containment of hazardous or non-hazardous substances

7.5.1 Causes of loss of containment of hazardous or non-hazardous substances

Hazardous and non-hazardous materials that could be accidentally released to the environment include fuels, hydraulic fluids and well fluids/additives. The pre activity site inspection will confirm the distance to any live process equipment and enable appropriate positioning of the JUR to minimise the risk of the release of inhibited seawater and other fluids is minimal (Section 7.3 for dropped objects), this risk was not deemed credible and not considered further. Causes of accidental releases from the JUR, support vessels and ROVs may include:

- failure or mechanical breakdown of equipment that use, store or transfer hazardous or non-hazardous materials
- failure to align valves correctly during transfer to tanks
- overfilling of chemical or well operations fluid tanks on the JUR
- incorrectly operated ‘environmentally sensitive’ valves

- overfilling of fuel bulk storage tanks on the JUR.

An evaluation of these types of events was completed to determine indicative volumes associated with each type of event.

Both hydraulic line failure and failure or breakdown of equipment onboard were associated with small volume spill events. A ROV underwater hydraulic line failure, for example, is estimated to result in a maximum spill volume of 20 L.

Operational fluids such as P&A brines or residual well fluids/muds, inadvertently released from a valve misalignment or unintentionally dumped from the storage tanks would pose the same or lesser risk. Volumes are likely to be less as the tanks are compartmentalised and have redundant alarms systems.

As an example, (AMSA, 2015) suggests the maximum credible spill volume from a refuelling incident with continuous supervision is approximately the transfer rate over 15 minutes. Assuming failure of dry-break couplings and based on the largest typical transfer rate in the order of 250 m³per hour, this equates to an instantaneous spill of approximately 63 m³.

7.5.2 Risks of loss of containment of hazardous or non-hazardous substances

A minor LOC has the potential to result in chronic and acute impacts to marine fauna via:

- change in water quality.

Given the low toxicity and high biodegradability of ROV hydraulic fluid the accidental release of a small volume is unlikely to adversely affect the receiving environment.

Effects from planned operational discharges and the planned discharge of cement are discussed in Sections 6.8. In the event of an unplanned LOC little incremental effect is expected on the benthic habitat beyond that predicted for planned discharges. The loss of a small area of habitat, until it can be re-colonised, will not adversely affect the viability of local populations of infauna or epifauna, the ecology of the local area or the biodiversity of the region. The incremental increase in consequence is considered Consequence Level IV as supported by considering the footprint as a percentage of the area of the Bass Strait region.

Small open sea hydrocarbon spills result in similar short-term impacts as that of a large hydrocarbon release . The characteristics of open sea waters is a significant mitigating factor in dispersing small oil spills, such that, no definitive evidence of long-term effects on marine fauna has been identified (Dicks, 1998. The environmental risks associated with a larger loss of diesel fuel from a vessel collision are assessed in Section 7.6.

Considering the small volumes of chemicals or hydrocarbons associated with this type of event together with the control measures in place, the likelihood of a LOC of hazardous substances resulting in the impacts described above is considered Likelihood Category D (very unlikely).

7.5.3 Residual risk ranking

Table 7-22 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.5.4 Controls

- **CM14:** Procedures for bulk transfer of fluids from support vessels
- **CMP13:** Design and certification of hoses
- **CM18:** Preventative Maintenance System
- **CM21:** Remotely Operated Vehicle (ROV) pre-post dive checks
- **CM22:** Remotely Operated Vehicle International Marine Contractors Association Audit
- **CMP14:** Bunding
- **CM20:** Shipboard Marine Pollution Emergency Plan

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.5.5 Demonstration of As Low as Reasonably Practicable

Table 7-23 Decision Context and justification

Decision Context A
<p>The transfer, storage and handling of fuels and chemicals offshore are commonly practised activities. There is a good understanding of potential spill sources, and the control measures required to manage these. Furthermore, the associated safety risks mean that these activities are well managed.</p> <p>There is little uncertainty associated with the potential environmental impacts which have been evaluated as Consequence Level IV (the lowest level).</p> <p>No issues, objections or claims were raised by relevant persons during the relevant persons consultation process for this campaign with regard to the accident release of hazardous substances.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 7-24 Good practice controls

Good practice	Adopted	Control	Rationale
Job Safety Analysis and Permit to Work	✓	CM14: Procedures for bulk transfer of fluids from support vessels	Job Safety Analysis and Permit to Work controls reflect industry good practice adopted to ensure the safety of personnel on board all vessels servicing and supporting offshore facilities, and to reduce the risks associated with such operations.
Design and certification of hoses	✓	CMP13: Design and certification of hoses	Hose certification reflects industry good practice adopted to ensure the safety of personnel on board all vessels servicing and supporting offshore facilities, and to reduce the risks associated with such operations.
Maintenance of hoses	✓	CM18: Preventative Maintenance System	It is industry good practice that a Preventative Maintenance System (PMS) is in place to ensure that hoses are inspected and replaced when degraded.
ROV condition check	✓	CM22: Remotely Operated Vehicle International Marine Contractors Association Audit CM21: Remotely Operated Vehicle (ROV) pre-post dive checks	It is industry practice to obtain an International Marine Contractors Association (IMCA) survey report prior to charter of an ROV to support marine activities. An IMCA audit is a verification tool which states the ROV condition and operational readiness as per IMCA guidelines.
Containment of oils and chemicals to prevent spills overboard	✓	CMP14: Bunding	It is industry good practice that storage of oils and chemicals is adequately contained.

Good practice	Adopted	Control	Rationale
Shipboard Marine Pollution Emergency Plan (SMPEP)	✓	CM20: Shipboard Marine Pollution Emergency Plan	<p>The vast majority of commercial ships are built to and surveyed for compliance with the standards (i.e. Rules) laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL.</p> <p>A vessel built in accordance with the applicable rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place.</p> <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place.</p> <p>To prepare for a spill event, the SMPEP details:</p> <ul style="list-style-type: none"> • response equipment available to control a spill event • review cycle to ensure that the SMPEP is kept up to date • testing requirements, including the frequency and nature of these tests. <p>In the event of a spill, the SMPEP details:</p> <ul style="list-style-type: none"> • reporting requirements and a list of authorities to be contacted • activities to be undertaken to control the release • procedures for coordinating with local authorities.

Table 7-25 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

7.5.6 Demonstration of acceptability

Table 7-26 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of MARPOL Annex I have been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia:</p> <ul style="list-style-type: none"> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</i> • <i>Marine Order 91 (Marine pollution prevention – oil) 2014.</i>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	✓	The controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet:</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent

Factor	Demonstration criteria	Criteria met	Rationale
			with policy and regulatory requirements <ul style="list-style-type: none"> OIMS System 8-1 objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the accidental release of hazardous substances.

7.6 Accidental release – Loss of containment of refined oils (collision)

7.6.1 Causes of loss of containment of refined oils

The following activities have the potential to result in a spill of MDO:

- a collision between the support vessel and the JUR or another third-party vessel that results in tank rupture and MDO loss.

Vessel drift or powered grounding is not considered credible given the distance from shore of the OA and the lack of emergent features in the OA.

7.6.2 Spill modelling

7.6.2.1 Modelling methodology

To understand the potential consequences of a MDO spill and the response preparedness required, stochastic and deterministic modelling was undertaken in accordance with the details outlined in Section 7.7.1.1 (RPS, 2019).

Table 7-27 Release locations used as part of the Gippsland Basin vessel activities marine diesel oil spill modelling study

Scenario	Location	Latitude	Longitude	Depth (mLAT)	Spill volume (m3)
1	West Kingfish platform	38° 35' 39" S	148° 06' 15" E	76	280
2	Perch platform	38° 34' 15" S	147° 19' 16" E	42	280
3	Barracouta platform	38° 17' 53" S	147° 40' 28" E	46	280
4	Kipper facility	38°10' 53" S	148° 35' 35" E	94	280
5	Halibut platform	38°24'16" S	148°19'13" E	73	220

Esso commissioned RPS to carry out quantitative oil spill modelling to assess five potential hydrocarbon spill scenarios associated with support vessel activities in the Gippsland Basin (RPS, 2019). The five spill locations are

used as representative indicators to assess potential impacts of spill risks across Esso's Bass Strait operations. The five spill locations are listed in Table 7-27 and spill volumes in all cases are based on rupture of the largest single fuel tank on the support vessel.

The Perch platform location was chosen to best represent the ADE because the Kipper, West Kingfish and Barracouta locations are outside the ADE, and it is closer to shore and has a larger spill volume than Halibut, so is therefore the more conservative location to use (i.e. it will have greater impacts to the shoreline than Halibut).

The spill model inputs and parameters are summarised in Table 7-28.

Table 7-28 Vessel collision marine diesel oil spill modelling inputs

Parameter	Details			
Number of spill simulations	100			
Period of the year (season)	Annual analysis			
Hydrocarbon type	MDO Group II			
Total spill volume	280 m ³			
Volume basis	AMSA's guideline for indicative maximum credible spill volumes for other, non-oil tanker, vessel collision (AMSA, 2015) is the volume of the largest fuel tank. The loss of a full tank is most likely an overestimate as hydrostatic pressure would limit the release and pumping of material to another tank could also restrict the amount lost. Based on the type of support vessel that may be used, the largest MDO tank volume of 280 m ³ has been used to undertake the risk assessment.			
Release location	Perch platform: 38° 34' 15" S, 147° 19' 16" E			
Location basis	Modelling was undertaken from a release point located at the Perch platform, in the southwest corner of the ADE. This location is appropriate for the assessment of impacts given it is closer to shore than most of the OAs in the ADE.			
Release duration	6 hours			
Modelled duration	30 days			
MDO Characteristics:				
Density	829 kg/m ³ @ 15°C			
API gravity	37.6			
Dynamic viscosity	4.0 cP @ 25°C			
Pour point	-14°C			
Oil property category	Group II (light persistent oil)			
Boiling point	Volatile	Semi-volatile	Low volatility	Residual

Parameter	Details			
	(<180°C)	(180–265°C)	(265–38 °C)	(>380°C)
	6.0 %	34.6 %	54.4 %	5.0 %

7.6.2.2 Modelling outputs – weathering and fate

Marine diesel contains 95% of light hydrocarbons (or non-persistent constituents) that are likely to evaporate when available to the atmosphere. The remaining 5% is composed of heavy hydrocarbons (or persistent compounds) that may persist on the sea-surface for extended times.

It is important to note that the viscosity of MDO does not change significantly over time and hence has a strong tendency to physically entrain into the upper water column as oil droplets in the presence of waves, where it is subjected to microbial degradation (decay) but can re-float to the surface if wave energies abate.

Figure 7-2 clearly shows that evaporation is the dominant process contributing to the removal of MDO from the sea surface.

Figure 7-2 presents the fates and weathering graph for the Perch ‘worst’ single spill trajectory. At the conclusion of the simulation period, approximately 75% spilled MDO was lost to the atmosphere through evaporation, approximately 12% of the MDO was predicted to have decayed and approximately 12% was predicted to remain within the water column. None is predicted to arrive ashore.

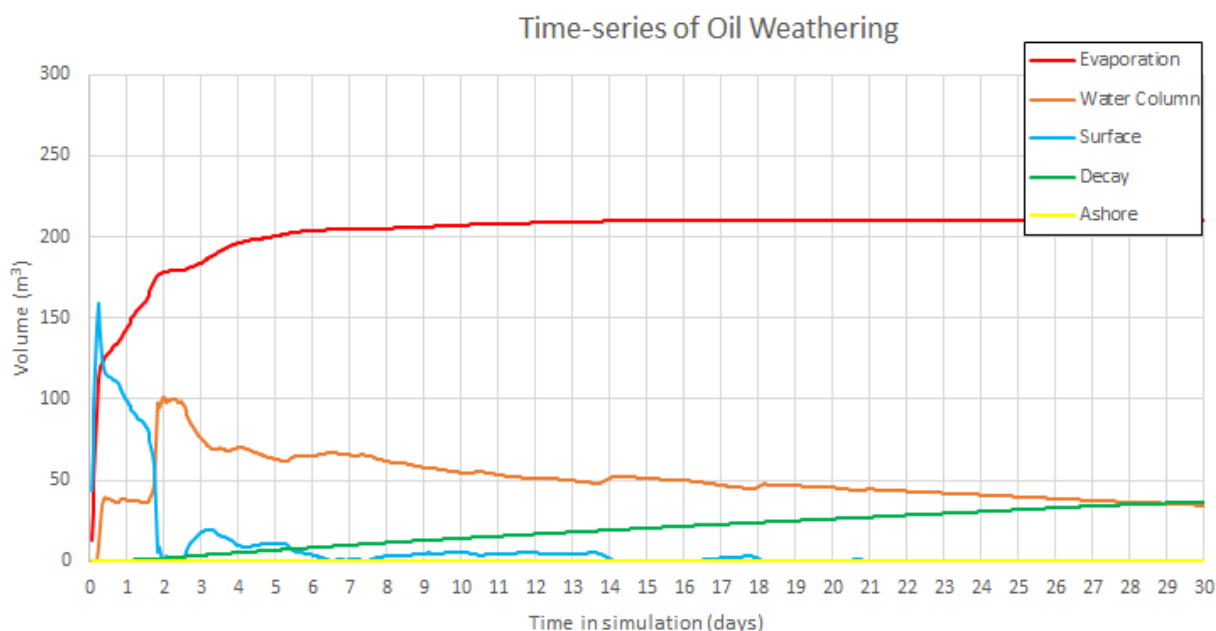


Figure 7-2 Predicted weathering and fates graph as volume for the selected blue Perch MDO spill trajectory

7.6.2.3 Modelling outputs – Stochastic

Oil spill modelling predicts that the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of any spill. This is known as the EMBA and is used for planning purposes to ensure that all social and environmental sensitivities are acknowledged, described and considered in the development of the EP.

Modelling is also used to inform specific impact assessments by understanding the location and extent of oil at concentrations likely to result in environmental consequences. There is no agreed exposure level below which environmental impacts will not occur so outputs should not be interpreted as a boundary. However, mapping areas that could be moderately impacted by a spill is a useful tool for impact consequence assessment. The environmental sensitivities within this area are described in Table 7-29.

Table 7-29 Vessel collision MDO modelling output summary

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories) Perch (as representative spill location for the ADE)
Sea surface exposure	Moderate (10 g/m ²)	<p>Maximum distance from release site is 24 km in a northeast direction. The zone of moderate exposure overlaps the following BIAs (99% probability):</p> <p><u>Birds</u></p> <ul style="list-style-type: none"> • Black-browed albatross – foraging • Buller’s albatross – foraging • Campbell albatross – foraging • Common diving-petrel – foraging • Indian yellow-nosed albatross – foraging • Short-tailed shearwater – foraging • Shy albatross – foraging • Wandering albatross – foraging. <p><u>Marine mammals</u></p> <ul style="list-style-type: none"> • PBW –foraging • SRW – migration <p><u>Fish</u></p> <ul style="list-style-type: none"> • Great white shark – distribution and breeding. <p>The spill does not extend into state waters or contact any marine parks at this threshold.</p>
	High (50 g/m ²)	<p>Maximum distance from release site is 1 km in a south-westerly direction. The zone of high exposure overlaps the same BIAs as per the ‘moderate’ threshold, but with a much lower probability of contact (6%).</p>
Shoreline exposure	Moderate (100 g/m ²)	<p>Probability of any shoreline contact along the Gippsland coast (Wellington and Woodside Beach sectors) is predicted as 2%.</p> <p>The maximum length of shoreline exposed is 7 km.</p> <p>The minimum time before shoreline accumulation at this threshold is 28 hours.</p>
In-water (dissolved) exposure	Moderate (50 ppb instantaneous)	No moderate in-water (dissolved) exposure is predicted.

Other features, outside of the mapped (moderately exposed) area that are within the EMBA are outlined in Table 7-30.

Table 7-30 Vessel collision MDO modelling output of other features outside the mapped area

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories) Perch (as representative spill location for the ADE)
Surface exposure	Low (1 g/m ²)	<p>Maximum 75 km from release location in an east-northeaster direction.</p> <p>The BIAs listed as being affected by moderate exposure (described above), have a 100 % probability of low surface exposure.</p>

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories) Perch (as representative spill location for the ADE)
		The modelling predicts no contact with any KEFs or AMPs.
Shoreline exposure	Low (10 g/m ²)	There is a 1-2 % probability of shoreline contact in the Wellington and Woodside Beach shoreline sectors.
In-water (dissolved) exposure	Low (10 ppb instantaneous)	<p>Exposure will be confined to the surface 10 m of the water column.</p> <p>Foraging seabirds, PBW and SRW, Indo-Pacific/spotted bottlenose dolphin (<i>Tursiops aduncus</i>) and great white shark BIA that occur in close proximity to release location have a 3 % probability of being exposed at the low instantaneous dissolved hydrocarbon threshold.</p> <p>Exposure is not predicted to extend into Victorian State Waters.</p>
In-water (entrained) exposure	Low (10 ppb instantaneous)	<p>Exposure will be confined to the surface 10 m of the water column.</p> <p>In-water entrained hydrocarbon at the low instantaneous threshold extends along the southeast Australian coast from the Bass Strait Islands to Wollongong in New South Wales.</p> <p>The probability of contact with the waters of various marine parks and reserves is 2 % at the Kent Group to 5 % at Batemans Marine Park to 49 % at Point Hicks Marine National Park.</p> <p>Entrained hydrocarbon at the low threshold is predicted to have a 49 % probability of reaching Victorian waters, 5 % for Tasmanian waters and 29 % for New South Wales waters.</p> <p>The BIAs predicted to be contacted by entrained oil at the low threshold – With probabilities of 20 – 50 % are:</p> <ul style="list-style-type: none"> • Antipodean albatross – foraging BIA • Wedge-tailed shearwater – foraging BIA • Humpback whale – foraging BIA • potted bottlenose dolphin – breeding BIA • ittle penguin – foraging BIA • KEF: Upwelling East of Eden. <p>With probabilities at, or less than, 20 % are:</p> <ul style="list-style-type: none"> • Black petrel – foraging BIA • Crested tern – breeding and foraging BIAs • Northern giant petrel – foraging BIA • Little penguin -- breeding BIA • Grey nurse shark – foraging and migration BIAs • KEFs: Big Horseshoe Canyon, Canyons on the Eastern Continental Slope, and Shelf Rocky Reefs.

7.6.3 Risks of loss of containment of refined oils

An accidental release of MDO has the potential to result in the following impacts:

- injury/mortality to fauna
- change in habitat
- change to the function, interests or activities of other users.

Table 7-31 outlines the impact assessment.

Table 7-31 Impact assessment

Receptor	Impact of MDO exposure	Exposure risk assessment
Plankton	<p>Plankton are found in nearshore and open waters beneath the surface in the water column. 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 both surface hydrocarbons but to a greater extent, hydrocarbons dissolved or entrained in the water column.</p>	<p>There is no predicted exposure above the moderate in-water (dissolved) threshold.</p> <p>The consequences to plankton are assessed as Consequence Level IV.</p>
Fish	<p>Fish can be exposed to oil through a variety of pathways, including: direct dermal contact (e.g. swimming through oil); ingestion (e.g. directly or via oil-affected prey/foods); and inhalation (e.g. elevated dissolved contaminant concentrations in water passing over the gills). Fish are generally considered vulnerable to oil spills because they inhabit areas coincident with oil exploration and production and those areas that may be subsequently impacted by an oil spill; including coral reefs, seagrasses, nearshore areas, deep offshore areas, pelagic habitats and demersal habitats (Moore & Dwyer, 1974) (Gundlach & Hayes, 1978). Of the potential toxicants, monoaromatic and polycyclic aromatic hydrocarbons (PAH) are generally regarded as the most toxic to fish.</p> <p><u>Surface oil</u></p> <p>Since fish and sharks do not generally break the sea surface, the exposure 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., 2004). As a result, wide-ranging pelagic fish of the open ocean generally are not highly susceptible to impacts from surface hydrocarbons. Adult fish kills reported after oil spills occur mainly to shallow water, near-shore benthic species (Volkman, et al., 2004). Following the Deep Water Horizon (DWH) incident, it was suggested that whale sharks may be vulnerable to oiling of gills if exposed to the oil. The tendency of whale sharks to feed close to surface waters will increase the likelihood of exposure to surface slicks and elevated hydrocarbon concentrations beneath slicks.</p> <p><u>In-water oil</u></p>	<p>MDO spills in open water are so rapidly diluted that fish kills are rarely observed (ITOPF, 2011 (NOAA, 2013). The predicted impact from surface oiling on fish is considered to be negligible at a population level.</p> <p>Pelagic free-swimming fish and sharks are unlikely to suffer either acute or chronic effects from oil spill exposure because dissolved/entrained hydrocarbons in the water column are predicted to be below thresholds at which impacts might occur and their mobile, transitory characteristics reduce the risk of prolonged exposure.</p> <p>The consequences to fish are assessed as Consequence Level IV.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>Exposure to hydrocarbons entrained or dissolved in the water column can be toxic to fish. Studies have shown a range of impacts including changes in abundance, decreased size, inhibited swimming ability, changes to oxygen consumption and respiration, changes to reproduction, immune system responses, DNA damage, visible skin and organ lesions, and increased parasitism. However, many fish species can metabolize toxic hydrocarbons, which reduces the risk of bioaccumulation (NRDA, 2012). Pelagic free-swimming fish and sharks are unlikely to suffer long-term damage from oil spill exposure because dissolved/entrained hydrocarbons in water are not expected to be sufficient to cause harm. Pelagic species are also generally highly mobile and as such are not likely to suffer extended exposure (e.g. >96 hours) at concentrations that would lead to chronic effects due to their patterns of movement. Demersal fish are not expected to be impacted given the presence of in-water hydrocarbons in surface layers only.</p> <p>Fish are most vulnerable to hydrocarbon discharges during their embryonic, larval and juvenile life stages. Oil exposure may result in decreased spawning success and abnormal larval development. 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 areal extent of a spill. As egg/larvae dispersal is widely distributed in the upper layers of the water column it is expected that current induced drift will rapidly replace any oil affected populations.</p>	
<p>Marine reptiles – Turtles</p>	<p>Marine turtles are vulnerable to the effects of oil at all life stages; eggs, hatchlings, juveniles, and adults. Oil exposure affects different turtle life stages in different ways; and each turtle life stage frequents a habitat with varied potential to be impacted during an oil spill. Several aspects of turtle biology and behaviour place them at particular risk, including a lack of avoidance, indiscriminate feeding in convergence zones, and large pre-dive inhalations.</p> <p>Marine turtles can be exposed to oil externally (e.g. swimming through oil slicks) or internally (e.g. swallowing the oil, consuming oil affected prey, or inhaling of volatile oil related compounds).</p> <p><u>Surface oil</u></p>	<p>While marine turtles are known to occur in the area potentially exposed to MDO at moderate – high concentrations, they do not reside or aggregate in significant numbers, and there are no recognised BIAs in the region.</p> <p>There are no turtle nesting beaches along the Gippsland coastline, so impacts to turtles from shoreline oiling will not occur.</p> <p>Although the effects of MDO on turtles can be severe, the low density of turtles expected in the region (due to lack of BIA or</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>Effects of oil on turtles include increased egg mortality and developmental defects; direct mortality due to oiling in hatchlings, juveniles, and adults; and negative impacts to the skin, blood, digestive and immune systems, and salt glands. Oil can enter cavities such as the eyes, nostrils, or mouth; and oil covering their bodies may interfere with breathing because they inhale large volumes of air to dive.</p> <p>Experiments on physiological and clinical pathological effects of hydrocarbons on loggerhead turtles (~15 to 18 months old) showed that the turtles' major physiological systems were adversely affected by both chronic and acute exposures (96 hour exposure to a 0.05 cm layer of South Louisiana crude oil versus 0.5 cm for 48 hours) (Lutcavage, Lutz, Bossart, & Hudson, 1995). Recovery from the sloughing skin and mucosa took up to 21 days, increasing the turtle's susceptibility to infection or other diseases, such as fibro papilloma (Lutcavage, Lutz, Bossart, & Hudson, 1995).</p> <p>Records of oiled wildlife during spills rarely include marine turtles, even from areas where they are known to be relatively abundant (Short, 2011). An exception to this was the large number of marine turtles collected (613 dead and 536 live) during the DWH incident in the Gulf of Mexico (GoM), although many of these animals did not show any sign of oil exposure (NOAA, 2013). Of the dead turtles found, 3.4 % were visibly oiled and 85 % of the live turtles found were oiled (NOAA, 2013). Of the captured animals, 88 % of the live turtles were later released, suggesting that oiling does not inevitably lead to mortality.</p> <p><u>Shoreline oil</u></p> <p>Turtles may experience oiling impacts on nesting beaches and eggs through chemical exposures resulting in decreased survival to hatching and developmental defects in hatchlings. Adult females crossing an oiled beach could cause external oiling of the skin and carapace; nothing that most oil is deposited at the high-tide line, and most turtles nest well above this level. Studies on freshwater snapping turtles showed uptake of PAH from contaminated nest sediments, but no impacts on hatching success or juvenile health following exposure of eggs to dispersed weathered light crude (Rowe, Mitchelmore, & Baker, 2009). However, other studies found evidence that exposure of freshwater turtle embryos to PAH results in deformities (Bell, Spotila, & Congdon, 2006) (Van Meter, Spotila, & Avery, 2006). Turtle hatchlings may be more</p>	<p>aggregations) suggests that few, if any, individuals would be affected in the event of a spill.</p> <p>Consequently, the potential impacts to marine reptiles are considered to be Consequence Level IV.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>vulnerable to smothering as they emerge from the nests and make their way over the intertidal area to the water. Hatchlings that contact oil residues while crossing a beach can exhibit a range of effects including impaired movement and bodily functions (Milton, Lutz, & Shigenaka, 2003). Hatchlings sticky with oily residues may also have more difficulty crawling and swimming, rendering them more vulnerable to predation.</p> <p>It should be noted that the threat and relative impacts of an unplanned discharge on some marine reptile species are considered less damaging than other stressors. Report cards produced on protected marine reptiles in Australia generally ranked oil pollution as either 'not of concern' or 'of less concern' depending on the marine region (DSEWPAC, 2012b).</p>	
Birds	<p>Seabirds and shorebirds are sensitive to the impacts of oiling, with their vulnerability arising from the fact that they cross the air – water interface to feed, while their shoreline habitats may also be oiled (Hook, Batley, Holloway, Irving, & Ross, 2016). Species that raft together in large flocks on the sea surface are particularly at risk (ITOPF, 2011).</p> <p><u>Surface oil</u></p> <p>Birds foraging at sea have the potential to directly interact with oil on the sea surface some considerable distance from breeding sites in the course of normal foraging activities. Seabird species most at risk include those that readily rest on the sea surface (e.g. shearwaters) and surface plunging species (e.g. terns, boobies). As seabirds are a top order predator, any impact on other marine life (e.g. pelagic fish) may disrupt and limit food supply both for the maintenance of adults and the provisioning of young.</p> <p>For seabirds, direct contact with hydrocarbons can foul feathers, which may subsequently result in hypothermia due to a reduction in the ability of the bird to thermo-regulate and impair waterproofing. A bird suffering from cold, exhaustion and a loss of buoyancy may also dehydrate, drown or starve (DSEWPAC, 2011). Increased heat loss as a result of a loss of water-proofing results in an increased metabolism of food reserves in the body, which is not countered by a corresponding increase in food intake, may lead to emaciation (DSEWPAC, 2011). The greatest vulnerability in this case occurs when birds are feeding or resting at the sea surface (Peakall, Wells, &</p>	<p>Several threatened, migratory and/or listed marine species may occur in the area exposed to moderate-high surface thresholds. There are foraging BIAs for some species of petrels and albatrosses throughout the EMBA. However, there are no breeding BIAs within this area.</p> <p>Seabirds rafting, resting, diving or feeding at sea have the potential to come into contact with surface oil, ranging from moderate to high exposure.</p> <p>Given the extensive ocean foraging habitat available to species such as albatross and petrel, the small area and temporary nature of MDO on the sea surface makes it unlikely that a spill will limit their ability to forage for unaffected prey. When first released, the MDO has higher toxicity due to the presence of volatile components. Individual birds making contact close to the spill source at the time of the spill may suffer impacts however it is unlikely that a large number of birds will be affected. As such, acute or chronic toxicity impacts (death or long-term poor health) to small numbers of birds are possible, however this is not considered significant at a population level.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>Mackay, 1987). In a review of 45 actual marine spills, there was no correlation between the numbers of bird deaths and the volume of the spill (Burger, 1993.</p> <p>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 (Hook, Batley, Holloway, Irving, & Ross, 2016). The Iron Baron vessel spill (325 MT of bunker fuel in Tasmania in 1995) is estimated to have resulted in the death of up to 20,000 penguins (Hook, Batley, Holloway, Irving, & Ross, 2016).</p> <p><u>Shoreline oil</u></p> <p>Shorebirds are likely to be exposed to oil when it directly impacts the intertidal zone and onshore due to their feeding habitats. Foraging shorebirds will be at potential risk of both direct impacts through contamination of individual birds (e.g. fouling of feathers) and indirect impacts (e.g. fouling and/or a reduction in prey items) (Clarke & Herrod, 2016). Birds that are coated in oil can also suffer from damage to external tissues, including skin and eyes, as well as internal tissue irritation in their lungs and stomachs.</p> <p>Breeding birds (both seabirds and shorebirds) may be exposed to oil via direct contact or the contamination of the breeding habitat (e.g. shores of islands) (Clarke & Herrod, 2016). Bird eggs may subsequently be damaged if an oiled adult sits on the nest. Fresh crude was shown to be more toxic than weathered crude, which had a medial lethal dose of 21.3 mgs per egg. Studies of contamination of duck eggs by small quantities of crude oil, mimicking the effect of oil transfer by parent birds, have been shown to result in mortality of developing embryos.</p> <p>Toxic effects on birds may result where oil is ingested as the bird attempts to preen its feathers, or via consumption of oil-affected prey. Whether this toxicity ultimately results in mortality will depend on the amount consumed and other factors relating to the health and sensitivity of the particular bird species.</p> <p>The threshold thickness of oil that could impart a lethal dose to an individual wildlife species is 10 µm (approximately 10 g/m²) (Engelhardt, Petroleum effects on marine mammals, 1983) (Clark, 1984) (Geraci & St. Aubin, 1988) (Jenssen, 1994). A layer 25 µm thick would be harmful for most birds that contact the slick (Scholten, et al., 1996).</p>	<p>The maximum length of shoreline predicted to be exposed to shoreline loading of hydrocarbons that may have biological impacts to birds (greater than 100 g/m²) is 9 km.</p> <p>This section of coastline comprises mostly wide sandy beaches that provides habitat for shorebird species such as hooded plovers and terns and nesting habitat for seabird species. MDO is unlikely to persist on the surface of sandy beaches because it quickly penetrates porous sediments (NOAA, 2013).</p> <p>This behaviour limits the duration of exposure to fauna on the shoreline. Shorebirds foraging for food in intertidal areas or along the high tide mark and splash zone may encounter weathered hydrocarbons that may be brought back to nests. Hydrocarbon entering the sandy nests of hooded plovers, terns or other bird species is likely to percolate through the sand and not accumulate in the feathers of adults or young. Toxicity effects from ingestion of contaminated prey caught in the intertidal zone or from direct exposure, or transport back to, are unlikely, as the volatile components are likely to have flashed off prior to stranding (minimum stranding times range from 2 days).</p> <p>The populations of seabird and shorebird species have a wide geographic range, meaning that impacts to individuals or a population at one location will not necessarily extend to populations at other un-impacted locations.</p> <p>Consequently, the potential consequence of risks to seabirds and shorebirds from a vessel collision event are considered to be Consequence Level III to account for a species of local importance being affected.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
<p>Marine mammals (Pinnipeds)</p>	<p>Pinnipeds are directly at risk from impacts associated with the exposure to surface, shoreline and in-water hydrocarbons.</p> <p><u>Sea surface oil</u></p> <p>Pinnipeds are vulnerable to sea surface exposures in particular given they spend much of their time on or near the surface of the water, as they need to surface every few minutes to breathe, and regularly haul out on to beaches. Pinnipeds are also sensitive as they will stay near established colonies and haul-out areas, meaning they are less likely to practise avoidance behaviours. This is corroborated by Aubin, 1988) who suggest seals, sea lions and fur seals have been observed swimming in oil slicks during a number of documented spills.</p> <p>As a result of exposure to surface oils, pinnipeds, with their relatively large, protruding eyes are particularly vulnerable to effects such as irritation to mucous membranes that surround the eyes and line the oral cavity, respiratory surfaces, and anal and urogenital orifices. Seals appear not to be very sensitive to contact with oil, but instead to the toxic impacts from the inhalation of volatile components (Hook, Batley, Holloway, Irving, & Ross, 2016).</p> <p>For some pinnipeds, fur is an effective thermal barrier because it traps air and repels water. Petroleum stuck to fur reduces its insulative value by removing natural oils that waterproof the pelage. Consequently, the rate of heat transfer through fur seal pelts can double after oiling (Geraci & St. Aubin, 1988), adding an energetic burden to the animal. It is suggested (Kooyman, Gentry, & McAllister, 1976) that in fact, fouling of approximately one-third of the body surface resulted in 50 % greater heat loss in fur seals immersed in water at various temperatures. Fur seals are particularly vulnerable due to the likelihood of oil adhering to fur. Heavy oil coating and tar deposits on fur seals may result in reduced swimming ability and lack of mobility out of the water.</p> <p><u>In-water oil</u></p> <p>Ingested hydrocarbons can irritate or destroy epithelial cells that line the stomach and intestine, thereby affecting motility, digestion and absorption.</p>	<p>Seals are known to occur within the area exposed to moderate-high surface threshold. However, these areas are not identified as critical habitat and there are no identified BIAs for seals in the region.</p> <p>There is no predicted oil stranding along shorelines known to be used by Australian or New Zealand fur seals as breeding or haul-out sites. As such, it is unlikely that oiling of seals will occur on shorelines.</p> <p>Although the characteristics of MDO reduce the risk of hyperthermia from oiling, other effects of surface and in-water MDO on pinnipeds can be severe. Long term impacts at a population level are considered unlikely however the consequence is assessed as Consequence Level III.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>However, pinnipeds have been found to have the enzyme systems necessary to convert absorbed hydrocarbons into polar metabolites, which can be excreted in urine (Engelhardt, 1982) (Addison & Brodie, 1984) (Addison, Brodie, Edwards, & Sadler, 1986) . Benzene and naphthalene ingested by seals is quickly absorbed into the blood through the gut, causing acute stress, with damage to the liver considered likely. If ingested in large volumes, hydrocarbons may not be completely metabolized, which may result in death (Volkman, Miller, Revill, & Connell, 1994).</p> <p><u>Shoreline oil</u></p> <p>Breeding colonies (used to birth and nurse until pups are weaned) are particularly sensitive to hydrocarbon spills (Higgins & Gass, 1993). Species that rely on fur to regulate their body temperature (such as fur seals) are the most vulnerable to oil as the animals may die from hypothermia or overheating, depending on the season, if the fur becomes matted with oil (ITOPF, 2011).</p> <p>It is reported that most pinnipeds scratch themselves vigorously with their flippers and do not lick or groom themselves, so are less likely to ingest oil from skin surfaces (Geraci & St. Aubin, 1988). However, mothers trying to clean an oiled pup may ingest oil.</p> <p>The Long-Term Environmental Impact and Recovery report for the Iron Barren oil spill concluded that “The number of pups born at Tenth Island in 1995 was reduced when compared to previous years. There was a strong relationship between the productivity of the seal colonies and the proximity of the islands to the oil spill wherein the islands close to the spill showed reduced pup production and those islands more distant to the oil spill did not” (Tasmanian SMPC, 1999).</p> <p>Pinnipeds are further at risk because they appear to rely on scent to establish a mother-pup bond (Sandegren, 1970) (Fogden, 1971), and consequently oil-coated pups may not be recognisable to their mothers. This is only theorised, with studies and research indicating interaction between mothers and oiled pups were normal (Davis & Anderson, 1976) (Davies, 1949) (Shaughnessy & Chapman, 1984).</p> <p>Australian sea lions have naturally poor recovery abilities due to unusual reproductive biology and life history (DSEWPAC, 2013). Due to the extreme philopatry of females</p>	

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>and limited dispersal of males between breeding colonies, the removal of only a few individuals annually may increase the likelihood of decline and potentially lead to the extinction of some of the smaller colonies.</p>	
<p>Marine mammals (Cetaceans)</p>	<p>Whales and dolphins can be exposed to the chemicals in oil through:</p> <ul style="list-style-type: none"> • internal exposure by consuming oil or contaminated prey • inhaling volatile oil compounds when surfacing to breathe • external exposure, by swimming in oil and having oil directly on the skin and body • maternal transfer of contaminants to embryos (NRDA, 2012). <p><u>Surface oil</u></p> <p>Direct surface oil contact with hydrocarbons is considered to have little deleterious effect on whales, possibly due to the skin's effectiveness as a barrier to toxicity, and effect of oil on cetacean skin is probably minor and temporary (Geraci & St. Aubin, 1988). A 10 to 25 µm oil thickness threshold has the potential to impart a lethal dose to the species, however also estimates a probability of 0.1 % mortality to cetaceans if they encounter these thresholds based on the proportion of the time spent at surface (French-McCay D. P., 2009). The inhalation of oil droplets, vapours and fumes is a distinct possibility if whales surface in slicks to breathe. Exposure to hydrocarbons in this way could damage mucous membranes, damage airways or even cause death.</p> <p><u>In-water oil</u></p> <p>The physical impacts from ingested hydrocarbon with subsequent lethal or sub-lethal impacts are both applicable to entrained oil. However, the susceptibility of cetaceans varies with feeding habits. Baleen whales (such as blue, southern right and humpback) are not particularly susceptible to ingestion of oil in the water column as they feed by skimming the surface. Oil may stick to the baleen while they 'filter feed' near slicks. Toothed whales and dolphins may be susceptible to ingestion of dissolved and entrained oil as they gulp feed at depth. As highly mobile species, in general it is very unlikely that these animals will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations (for example greater than 96 hours) that would lead to chronic effects. Note also, many marine mammals appear</p>	<p>Several threatened, migratory and/or listed cetacean species may traverse through the MDO spill plume. The foraging BIA for the PBW and the migration BIA for the SRW may be exposed to surface concentrations at moderate-high thresholds.</p> <p>Biological effects of physical contact with areas of moderate concentrations of MDO at the sea surface are unlikely to lead to any long-term consequences. In the unlikely event of an MDO spill, the environmental impact would be limited to a relatively short period following the release and would need to coincide with migration to result in exposure of a large number of individuals. The highly mobile nature of cetacean species means that such exposure is not anticipated to result in long term population viability effects and the resultant impact is assessed as Consequence Level III.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>to have the necessary liver enzymes to metabolise hydrocarbons and excrete them as polar derivatives.</p> <p>Evidence suggests that many cetacean species are unlikely to detect and avoid spilled oil (Matkin, Saulitis, Ellis, Olesiuk, & Rice, 2008). There are numerous examples where cetaceans have appeared to incidentally come into contact with oil and/or not demonstrated any obvious avoidance behaviour; e.g. following the Exxon Valdez oil spill, (Matkin, Saulitis, Ellis, Olesiuk, & Rice, 2008) reported killer whales in slicks of oil as early as 24 hours after the spill.</p> <p>Some whales, particularly those with coastal migration and reproduction, display strong site fidelity to specific resting, breeding and feeding habitats, as well as to their migratory paths and this may override any tendency for cetaceans to avoid the noxious presence of hydrocarbons. The SRW exhibits varying degrees of site fidelity, with the majority of females and calves returning to the same birthing location, while some also travel long distances between breeding grounds within a season (CMPSRW). If spilled oil reaches these biologically important habitats, the pollution may disrupt natural behaviours, displace animals, reduce foraging or reproductive success rates and increase mortality. If sufficiently high numbers are impacted, the greater population may experience reduced recovery and survival rates.</p>	
<p>Coastal habitat – Sandy shoreline</p>	<p>Sandy beaches provide potential foraging and breeding habitat for numerous bird, marine turtle and pinniped species. These activities primarily occur above the high tide line, with exception of haul outs. Note, most of the oil on a sandy shore will be concentrated at, and below, the high tide mark. Sandy beaches are also inhabited by a diverse assemblage (although not always abundant) of infauna (including nematodes, copepods and polychaetes); and macroinvertebrates (e.g. crustaceans). Because the sand retains oil, such animals may be killed if oil penetrates into the sediments. Long-term depletion of sediment fauna could have an adverse effect on birds or fish that use tidal flats as feeding grounds (IPIECA, 1999).</p> <p>Depth of penetration in sandy sediment is influenced by:</p> <ul style="list-style-type: none"> • particle size. Penetration is not generally as great on mud as on coarser sediments 	<p>The maximum length of coastline potentially at risk from stranded oil at the moderate threshold is 9 km. This coastline is dominated by wide sandy beaches.</p> <p>With the shortest time to shoreline accumulation at the moderate threshold being approximately 3 days, the MDO will have partially weathered. The shoreline loadings may result in acute toxicity, and mortality, of invertebrate communities, especially as the MDO will easily penetrate into sandy sediments. However, tidal action is expected to lead to rapid weathering of any hydrocarbons in the intertidal area and the populations of these communities would be likely to rapidly</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<ul style="list-style-type: none"> • oil viscosity. Viscous oils and mousse (water-in-oil emulsion) tend to penetrate less deeply than low-viscosity oils such as light crudes or diesel oil • drainage. If sediments are poorly drained (as is often the case with tidal flats remote from creeks or channels), the water content may prevent the oil from penetrating into the sediment. In contrast, oil may reach depths greater than one metre in coarse well-drained sediments • animal burrows and root pores. Penetration into fine sediments is increased if there are burrows of animals such as worms, or pores left where plant roots have decayed. <p>A 100 g/m² threshold (considered a 'stain' or 'film', and equivalent to 0.1 mm thickness) is assumed as the lethal threshold for invertebrates on hard substrates and sediments (mud, silt, sand, gravel) in intertidal habitats. A threshold of 100 g/m² oil thickness would be enough to coat an animal and likely impact its survival and reproductive capacity (French-McCay D. P., 2009). Based on this, areas of heavy oiling would likely result in acute toxicity, and death, of many invertebrate communities, especially where oil penetrates into sediments through animal burrows (IPIECA, 1999). However, these communities would be likely to rapidly recover (recruitment from unaffected individuals and recruitment from nearby areas) as oil is removed from the environment.</p> <p>Following the Sea Empress spill (in west Wales, 1996) many amphipods (sandhoppers), cockles and razor shells were killed. There were mass strandings on many beaches of both intertidal species (such as cockles) and shallow sub-tidal species. Similar mass strandings occurred after the Amoco Cadiz spill (in Brittany, France, 1978) (IPIECA, 1999). Following the Sea Empress spill, populations of mud snails recovered within a few months, but some amphipod populations had not returned to normal after one year. Opportunists such as some species of worm may actually show a dramatic short-term increase following an oil spill (IPIECA, 1999).</p> <p>In March 2014, small volumes of crude oil from an unidentified source (confirmed to not be offshore oil and gas production facilities) washed up along a 7 km section of sandy beach on the Victorian Gippsland coast as small (a few millimetres thick)</p>	<p>recover. The impact of MDO coming ashore on sandy beaches is considered to have a Consequence Level III.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>granular balls (Gippsland Times, 2014). No impacts were observed over the course of two months following the incident (AMSA, 2014).</p> <p>As a result of the DWH incident, oil washed up on sandy beaches of the Alabama coastline. The natural movement of sand and water through the beach system continually transformed and re-distributed oil within the beach system, and 18 months after the event, mobile remnant oil remained in various states of weathering buried at different depths in the beaches (Hayworth, Clement, & Valentine, 2011). There is also evidence that submerged oil mats exist just offshore of the Alabama beaches (ranging in thickness from a few millimetres to several centimetres), which has resulted in the regular washing up of tar balls onto sandy beaches. These submerged oil mats may serve as long-term sources of remnant oil to the beach ecosystem (Hayworth, Clement, & Valentine, 2011). Long-term changes to the beach ecosystem as a result of stranded oil are unknown.</p> <p>Other results from beach sampling undertaken at Dauphin Island, Alabama, in May (pre-impact) and September 2011 (post-impact) found a large shift in the diversity and abundance of microbial species (e.g. nematodes, annelids, arthropods, polychaetes, protists, fungi, algae and bacteria). Post-spill, sampling indicated that species composition was almost exclusively dominated by a few species of fungi. DNA analyses revealed that the 'before' and 'after' communities at the same sites weren't closely related to each other (Bik, Halanych, Sharma, & Thomas, 2012). Similar studies found that oil deposited on the beaches caused a shift in the community structure toward a hydrocarbonoclastic consortium (petroleum hydrocarbon degrading microorganisms) (Lamendella, et al., 2014).</p>	
National parks and reserves	Potential impacts to sensitive receptors related to the shoreline of the Gippsland Lakes Coastal Park, such as sandy beaches and birds, are discussed in the appropriate sections above.	<p>Part of the coast bordering the Gippsland Lakes Coastal Park is within the zone of moderate shoreline exposure.</p> <p>The consequence to Gippsland Lakes Coastal Park is assessed as localised and short-term, and ranked as Consequence Level III.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
<p>Commercial fisheries</p>	<p>Commercial fishing has the potential to be impacted through exclusion zones associated with the spill, the spill response and subsequent reduction in fishing effort. Exclusion zones may impede access to commercial fishing areas, for a short period of time, and nets and lines may become oiled. The impacts to commercial fishing from a public perception perspective, however, may be much more significant and longer term than the spill itself.</p> <p>Fishing areas may be closed for fishing for shorter or longer periods because of the risks of the catch being tainted by oil. Concentrations of petroleum contaminants in fish and crustacean and mollusc tissues could pose a significant potential for adverse human health effects, and until these products from nearshore fisheries have been cleared by the health authorities, they could be restricted for sale and human consumption. Indirectly, the fisheries sector will suffer losses if consumers are either stopped from using or unwilling to buy fish and shellfish from the region affected by the spill.</p> <p>Impacts to fish stocks have the potential for reduction in profits for commercial fisheries, and exclusion zones exclude fishing effort. Detectable tainting of fish flesh was reported after a 24-hour exposure at crude concentrations of 0.1 ppm, marine fuel oil concentrations of 0.33 ppm and diesel concentrations of 0.25 ppm (Davis, Moffat, & Shepherd, 2002).</p> <p>The Montara spill (as the most recent [2009] example of a large hydrocarbon spill in Australian waters) occurred over an area fished by the Northern Demersal Scalefish Managed Fishery (with 11 licences held by seven operators), with goldband snapper (<i>Pristipomoides typus</i>), red emperor (<i>Lutjanus sebae</i>), saddletail snapper (<i>Lutjanus malabaricus</i>) and yellow spotted rockcod (<i>Epinephelus andersoni</i>) being the key species fished (PTTEP, 2013). As a precautionary measure, the Western Australia Department of Fisheries advised the commercial fishing fleet to avoid fishing in oil-affected waters. Testing of fish caught in areas of visible oil slick (November 2009) found that there were no detectable petroleum hydrocarbons in fish muscle samples, suggesting fish were safe for human consumption. In the short-term, fish had metabolised petroleum hydrocarbons.</p>	<p>Several commercial fisheries may operate within the area potentially exposed to an MDO plume and a temporary fisheries closure may be put in place.</p> <p>Oil may foul the hulls of fishing vessels and associated equipment, such as gill nets. A temporary fisheries closure, combined with oil tainting of target species (actual or perceived), may lead to financial losses to fisheries and economic losses for individual licence holders.</p> <p>Due to the rapid weathering of the MDO in the high energy Bass Strait environment, it is unlikely that an exclusion zone would be established, consequently, the potential impacts to commercial fisheries from an MDO spill are considered to be Consequence Level III (based on public impact consequence considerations as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018).</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>Limited ill effects were detected in a small number of individual fish only (PTTEP, 2013). No consistent effects of exposure on fish health could be detected within two weeks following the end of the well release. Follow up sampling in areas affected by the spill during 2010 and 2011 (PTTEP, 2013) found negligible ongoing environmental impacts from the spill.</p> <p>Since testing began in the month after the DWH blowout in the GoM levels of oil contamination residue in seafood consistently tested 100 to 1,000 times lower than safety thresholds established by the USA Food and Drug Administration (FDA), and every sample tested was found to be far below the USA FDA’s safety threshold for dispersant compounds (BP, 2015). The USA FDA testing of oysters found oil contamination residues to be ten to one hundred times below safety thresholds (BP, 2015). Sampling data shows that post-spill fish populations in the GoM since 2011 were generally consistent with pre-spill ranges and for many shellfish species, commercial landings in the GoM in 2011 were comparable to pre-spill levels. In 2012, shrimp (prawn) and blue crab landings were within 2.0 % of 2007 to 2009 landings. Recreational fishing harvests in 2011, 2012 and 2013 exceeded landings from 2007-09 (BP, 2015).</p>	
Cultural – Indigenous and historic	Visible sheen has the potential to reduce the visual amenity of cultural heritage sites such as indigenous or historic (e.g. shipwreck) protected areas.	Oil sheen is predicted to encroach upon nearshore waters in the vicinity of the Gunai Kurnai Native Title Determination Area and a number of historic shipwrecks. However, given the relatively short duration, and limited extent of predicted exposure the consequence is considered Consequence Level IV (based on public impact consequence considerations as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018).
Recreation and tourism	Refer to sections on fish, cetaceans and sandy shorelines above.	<p>Tourism and recreation is also linked to the presence of marine fauna (e.g. whales), particular habitats and locations for swimming or recreational fishing.</p> <p>The modelling predicts a low probability of visible oil extending into Victorian waters (including Ninety Mile Beach Marine</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
		<p>National Park) and to the sandy shoreline along Ninety Mile Beach (including Gippsland Lakes Coastal Park).</p> <p>Short-term impacts to nature-based tourism and other human uses of beaches (and nearshore waters) may occur as a result of temporary beach closures to protect human health or due to perceptions of a polluted environment that is not desirable to visit.</p> <p>However, given the relatively short duration, and limited extent of predicted shoreline contact the consequence is considered Consequence Level III based on public impact consequence considerations as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018).</p>

7.6.4 Residual risk ranking

Table 7-32 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
III	E	4

7.6.5 Controls

- **CM27:** Support vessel approach procedure
- **CM28:** Activity Specific Operating Guidelines/Critical Activity Mode procedures
- **CM29:** Support vessel dynamic positioning system
- **CM20:** Shipboard Marine Pollution Emergency Plan
- **CM12:** Oil Pollution Emergency Plan
- **CM35:** Operational and Scientific Monitoring Plan (OSMP)

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.6.6 Demonstration of As Low as Reasonably Practicable

Table 7-33 Decision Context and justification

Decision Context A
<p>Operating vessels close to an offshore facility (platform, JUR) is common practice for activities such as fuel transfer, provision of cargo, and reverse logistical support. These activities are well regulated with associated control measures, well understood, and are implemented across the offshore industry.</p> <p>Although there is the potential for impacts of Consequence Level III from a vessel collision, spill source volumes are limited in size, the environmental impact of MDO is well understood, a credible spill volume has been modelled and a very conservative threshold has been selected to define the EMBA, so there is limited uncertainty associated with this event.</p> <p>No issues, objections or claims were raised by relevant persons during the consultation process with regard to the risk of LOC resulting from a vessel collision.</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 7-34 Good practice controls

Good practice	Adopted	Control	Rationale
Support vessel approach protocols.	✓	CM27: Support vessel approach procedure	It is standard industry practice for procedures describing support vessel approach protocols to be developed.
Structured operational limits criteria for DP operations.	✓	CM28: Activity Specific Operating Guidelines/Critical Activity Mode procedures	The application of ASOG/Critical Activity Mode risk management tools is industry best practice for DP operations. Critical Activity Mode describes how to configure the vessels DP system and ASOG sets out the operational, environmental and equipment performance limits considered necessary for safe DP operations while carrying out a specific activity.
DP Class 2.	✓	CM29: Support vessel dynamic positioning system	DP Class 2 (redundancy so that no single fault in an active system will cause the system to fail) is the industry standard where loss of position keeping

Good practice	Adopted	Control	Rationale
Pre-start notifications.	✓	CM36: Pre-start notifications	<p>capability may cause personnel injury, pollution or damage with large economic consequences.</p> <p>Under the <i>Navigation Act 2012</i>, the AHO is responsible for maintaining and disseminating hydrographic and other nautical information and nautical publications including:</p> <ul style="list-style-type: none"> • Notices to Mariners • AUSCOAST warnings. <p>Details of the PSZ will be published in Notices to Mariners, thus enabling other marine users to plan their activities, and minimising disruption to exclusion zones.</p> <p>Relevant details will be provided to the JRCC to enable AUSCOAST warnings to be disseminated.</p> <p>Pre-start notices will be provided to all relevant persons approximately four weeks and then one week prior to activities commencing.</p>
SMPEP.	✓	CM20: Shipboard Marine Pollution Emergency Plan	<p>The vast majority of commercial ships are built to and surveyed for compliance with the standards (i.e. Rules) laid down by classification societies. The role of vessel classification and classification societies has been recognised by the IMO across many critical areas including the SOLAS, the 1988 Protocol to the International Convention on Load Lines and MARPOL.</p> <p>A vessel built in accordance with the applicable Rules of an IACS member society may be assigned a class designation relevant to the IMO rules, on satisfactory completion of the relevant classification society surveys. For ships in service, the society carries out routine scheduled surveys to verify that the ship remains in compliance with those Rules. Should any defects that may affect class become apparent, or damages be sustained between the relevant surveys, the owner is required to inform the society concerned without delay.</p> <p>MARPOL Annex I Regulations for the Prevention of Pollution by Oil specifically require that a SMPEP (or equivalent, according to class) is in place.</p> <p>To prepare for a spill event, the SMPEP details:</p> <ul style="list-style-type: none"> • response equipment available to control a spill event • review cycle to ensure that the SMPEP is kept up to date • testing requirements, including the frequency and nature of these tests.

Good practice	Adopted	Control	Rationale
			<p>In the event of a spill, the SMPEP details:</p> <ul style="list-style-type: none"> reporting requirements and a list of authorities to be contacted activities to be undertaken to control the release procedures for coordinating with local authorities.
Oil spill response planning.	✓	CM12: Oil Pollution Emergency Plan	Under the OPGGS (Environment) Regulations, NOPSEMA require that the petroleum activity have an accepted OPEP in place before commencing the activity. In the event of a vessel collision the OPEP will be implemented.
Oil spill monitoring planning.	✓	CM35: Operational and Scientific Monitoring Plan (OSMP)	<p>Esso’s OSMP details the arrangements and capability in place for:</p> <ul style="list-style-type: none"> operational monitoring of a hydrocarbon spill to inform response activities scientific monitoring of environmental impacts of the spill and response activities. <p>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 potentially longer-term remediation activities are required.</p>

Table 7-35 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
N/A	N/A	N/A	N/A

7.6.7 Demonstration of acceptability

Table 7-36 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	✓	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	✓	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.

Factor	Demonstration criteria	Criteria met	Rationale
	Activity does not have the potential to result in serious or irreversible environmental damage.	✓	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The proposed activities align with the requirements of the:</p> <ul style="list-style-type: none"> • <i>Navigation Act 2012 – Chapter 6 (Safety of Navigation)</i> Part 6 deals with safe navigation including provisions about reporting of movement of vessels. <p>The requirements of MARPOL Annex I has been adopted.</p> <p>The following legislative and other requirements are considered relevant as they apply to the implementation of MARPOL in Australia:</p> <ul style="list-style-type: none"> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Navigation Act 2012 – Chapter 4 (Prevention of Pollution)</i> • <i>Marine Order 91 (Marine pollution prevention – oil) 2014.</i>
Internal context	Consistent with Esso’s Environment Policy.	✓	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	✓	There is no standard related to a LOC of MDO but the activities proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	✓	<p>Proposed activities meet</p> <ul style="list-style-type: none"> • OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements • OIMS System 8-1 objective to clearly define and communicate OI requirements to contractors • OIMS System 10-2 objectives to document, resource and communicate emergency response plans, and conduct training, exercises and/or drills to determine the adequacy of the plans.

Factor	Demonstration criteria	Criteria met	Rationale
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	✓	No relevant person concerns have been raised concerning the risk of LOC resulting from a vessel collision.

7.7 Accidental release – Loss of containment of reservoir hydrocarbons

7.7.1 Causes of loss of containment of reservoir hydrocarbons

7.7.1.1 Loss of well control

A LOWC can occur when primary and secondary well control measures fail, which could potentially result in a release of reservoir hydrocarbons into the marine environment, if there is communication from the reservoir section to the wellbore. Of the 26 wells included in this activity, the Whiptail-1A and Mulloway-1 wells have been selected as the wells with the highest possible discharge and therefore represent the WCDS. The properties of the crudes from these two wells are presented in Section 2.5.

The WCDS modelled for this program was for a one inch perforation hole in casing against zero surface pressure.

7.7.1.2 Spill modelling

To understand the potential consequences of a LOWC and the response preparedness required, Esso commissioned RPS to undertake stochastic and deterministic oil spill modelling for this activity. The RPS (2023) is included in Appendix I.

7.7.1.3 Stochastic modelling

Stochastic modelling is used to determine the total area that may be exposed. By overlaying 100 spill simulations initiated at random different start times into a single map, stochastic modelling shows all the areas that could be affected, not just the area affected by a single spill. The methodology for undertaking stochastic modelling is outlined in Section 1.1 of Appendix I.

Using the WCDS and the low threshold hydrocarbon exposure levels per Table 3-1, stochastic modelling has been used to define the spill EMBA in Section 3.2 and as described in Appendix A. Stochastic modelling also predicts the extent and the degree of exposure, which enables an assessment of the possible consequence to environmental receptors as discussed in this section.

Oil spill modelling is used to determine the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of any spill. This is known as the EMBA and is used for planning purposes to ensure that all social and environmental sensitivities are identified, described and considered in the development of the EP. The hydrocarbon thresholds, or exposure levels used to define the EMBA are shown in Table 3-1. The values and sensitivities within the EMBA are described in Appendix A.

7.7.1.4 Deterministic modelling

Deterministic modelling for a single worst-case simulation is used to predict the fate and weathering of spilled hydrocarbons. The methodology for undertaking deterministic modelling is outlined in Section 1.1 of Appendix I. It is also used to inform initial response planning by ensuring sufficient resources are available to mount an effective response and inform decisions relating to protection priorities of potential receptors at risk, noting that in the event of a spill the actual trajectory will depend on the nature of the spill and the environmental conditions at the time. A map of the worst-case deterministic simulation is included in the activity-specific Quick Reference Guide in [Attachment 2](#).

7.7.1.5 Representative crude selection

The Whiptail-1A and Mulloway-1 wells have been chosen as the representative wells for the purposes of oil spill modelling, for the reasons outlined in Section 2.5.

On completion of exploration drilling, both wells were suspended. Reservoir analysis dates back to this period and there is no means of accessing oil samples from the Whiptail-1A and Mulloway-1 wells to provide current pressure, volume, temperature analysis for determining the fluid behaviours and properties of oil and gas samples needed to perform the modelling. Instead, sufficiently characterised pre-existing data from the Whiptail-1A and Mulloway-1 wells allowed an analogue to be identified.

As such, West Kingfish crude was selected as the best-match analogue for Whiptail-1A and Halibut crude was selected as the best match for Mulloway-1. Table 7-37 shows the properties of the West Kingfish and Halibut assays, compared to the Whiptail-1A and Mulloway-1 samples, which are incomplete and do not include the long chain hydrocarbon components (the persistent elements). West Kingfish and Halibut assays are classified as Group II (light persistent oil).

The pour point for West Kingfish (9 °C) closely matches that of Whiptail-1A (10°C), though the wax content of West Kingfish (25%) is much higher than that of Whiptail-1A (3.9%). The pour point for Halibut (0°C) varies to that of Mulloway-1 (< -10°C), though the wax content of Halibut (23.7%) is much higher than that of Mulloway-1 (0.92%). RPS advises that this is not a major concern as the model is set up to assume that release is in a liquid state.

Table 7-37 Loss of well control spill modelling inputs

Parameter	Scenario 1 – Whiptail-1A	Scenario 2 – Mulloway-1
Oil analogue	West Kingfish crude	Halibut
Number of spill simulations	100	100
Period of the year (season)	Annual analysis	
Classification	Group II (light persistent)	
API gravity	45.7	40.6
Density (kg/m ³ @15°C)	798.1	821.5
Viscosity (cP @15°C)	2.0	2.97
Wax content	25.0 %	23.7 %
Pour point (°C)	9	0
Oil flow rate	26.17 m ³ /hr (3.95 MSTB/d)	9.67 m ³ /hr (1.46 MSTB/d)
Gas flow rate	188.78 m ³ /hr (0.16 MMscf/d)	Gas 47.2 m ³ /hr (0.04 MMscf/d)
Release type	Surface	Surface
Release duration	98 (tracked for 118 days)	98 (tracked for 118 days)
Total release volume	61,544 m ³ (405,575 bbl, 0.39 MMSTB)	22,747 m ³ (149,903 bbl, 0.14 MMSTB)
Volume basis	Spill resulting from leak through multiple holes in the casing with a flow area equivalent to a single 1" hole in the casing located opposite permeable sand with large offset from original oil water contact, as well as the loss of multiple surface barriers during P&A work.	

Parameter	Scenario 1 – Whiptail-1A	Scenario 2 – Mulloway-1
	Flow to atmosphere at surface through casing and HP riser, with no restrictions in the wellbore. Discharge at the blow out preventer level in rig air gap resulting in LOC at sea level.	
Release location	147° 31' 14.96" E, 38° 19' 24.87" S	147° 29' 01.79" E, 38° 19' 24.25" S
Duration basis	Relief well assumed to be primary response plan (refer to Attachment 2). The response time for a relief well is based on rig mobilisation from Singapore taking 98 days as a conservative case.	

Note: For the purposes of assessing impacts from a LOWC in this EP, modelling assumed reservoir pressure based on original formation pressure trends calibrated with recent nearby West Barracouta pressures and assumes no further regional pressure depletion due to West Barracouta production and no local pressure depletion due to well flow during the release period. The modelling assumes no water cut and free flow to atmospheric conditions from casing holes with no drill string in hole and no surface choking effects.

The West Kingfish and Halibut oils are included in the Bass Strait Operations EP (AUGO-EV-EMM-002) and OPEP (available on the [NOPSEMA website](#)).

MODELLING OUTPUTS – WORST CASE DISCHARGE EMBA COMPARISON

From the Modelling results an analysis was undertaken to compare the JUR worst case discharge EMBA (Appendix A Figure 1-1) and the Bass Strait EP Worst case discharge modelling (AUGO-EV-EMM-002 Volume 2 Section 7.7.2). From comparison the worst case spill volume of 387 kbbl from a JUR spill compared to the worst case of 519 kbbl confirms that the existing response capabilities in place for an Esso Bass Strait worst case loss of containment are in excess of what would be required for a JUR worst case discharge response.

The modelling undertaken in Bass Strait has resulted in an EMBA that is larger than the JUR Worst Case EMBA. Therefore the oil spill response capability outlined in the existing OPEP and Bass Strait EP is adequate to respond to a worst case discharge for JUR. The JUR Quick reference guide response capabilities were developed based on a review of the Bass Strait Volume 3 Response capabilities and are all equal to or less than what is required for a Worst Case Spill response in the Bass Strait EMBA.

WEATHERING AND FATE

West Kingfish and Halibut crudes are composed of hydrocarbons that have a range of boiling points and volatiles at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere.

- West Kingfish crude has 18.2% volatiles and 24.4% semi-volatile compounds (non-persistent, expected to evaporate within 24 hours), 38.7% low-volatility compounds (expected to evaporate within several days) and 18.1% persistent compounds. Figure 7-3 shows that evaporation is the dominant process contributing to the removal of the West Kingfish crude oil from the sea surface.
- Halibut crude has 15.2% volatiles and 25.6% semi-volatile compounds (non-persistent, expected to evaporate within 24 hours), 41.6% low-volatility compounds (expected to evaporate within several days) and 17.6% persistent compounds. Figure 7-4 shows that evaporation is the dominant process contributing to the removal of the Halibut crude oil from the sea surface.

The deterministic trajectory for each set of LOWC modelling that resulted in the maximum volume of oil on shore was considered the ‘worst’ simulation and was selected for weathering and fate analysis.

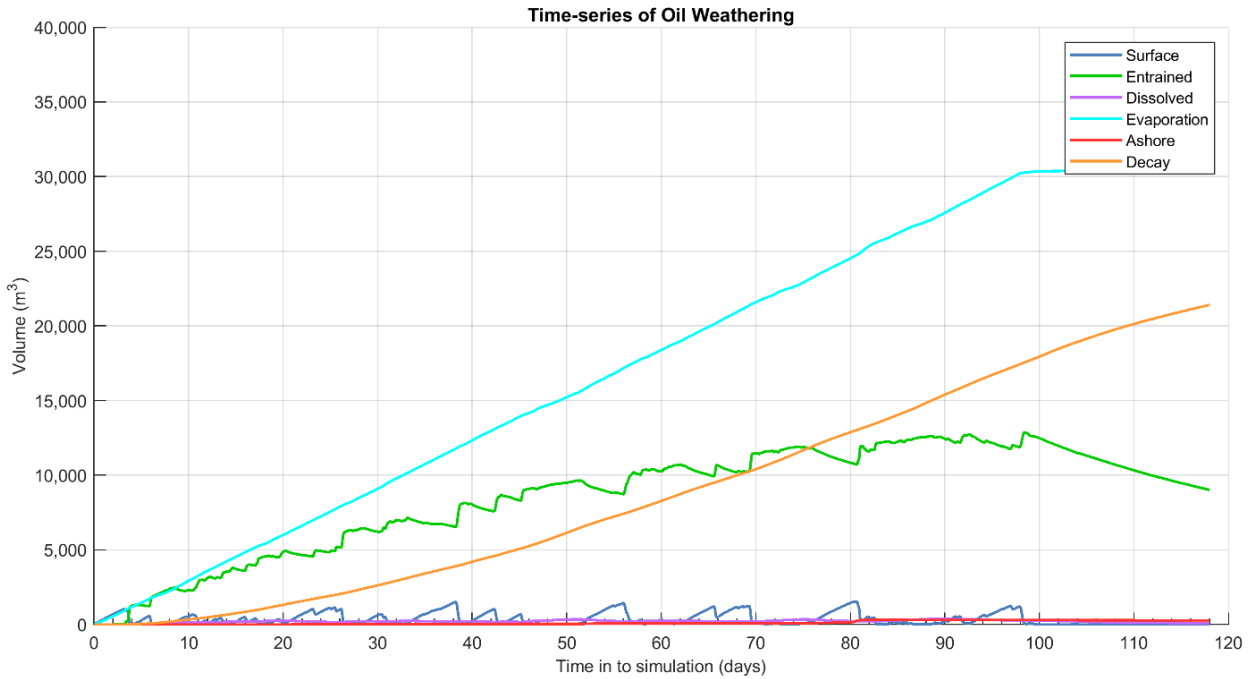


Figure 7-3 Predicted West Kingfish crude (at the Whiptail location) weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m²

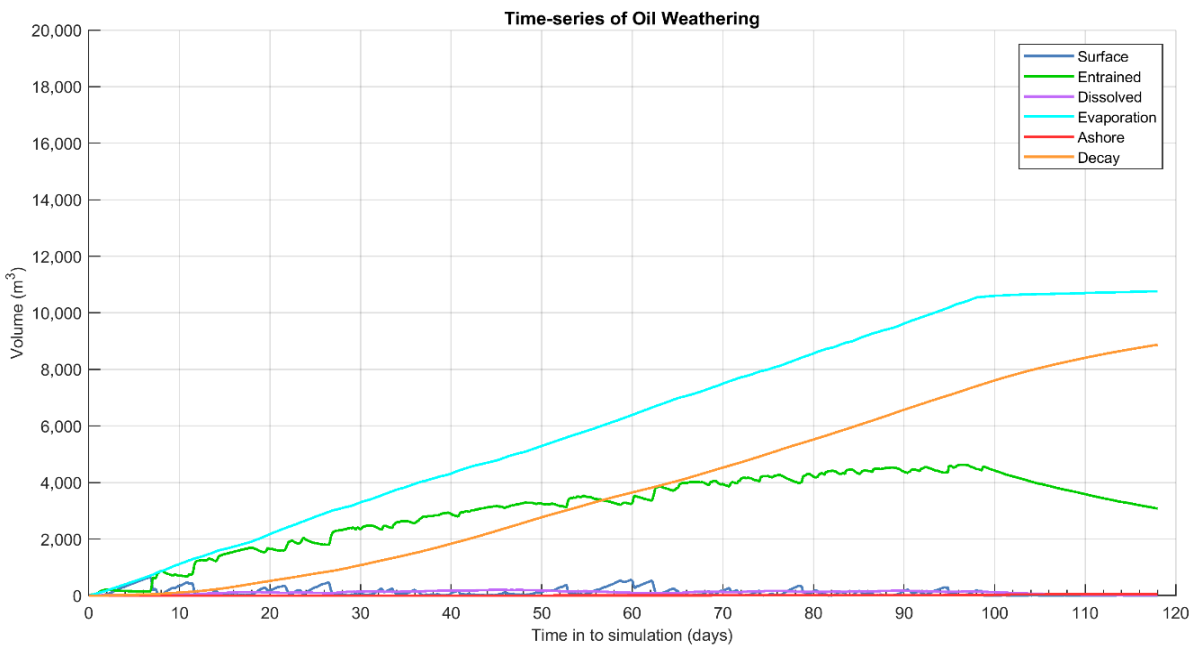


Figure 7-4 Predicted Halibut crude (at the Mulloway location) weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m²

MODELLING OUTPUTS STOCHASTIC

Oil spill modelling predicts the total area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of any spill. The spill EMBA (refer Section 3.2) is derived from this data and is used for planning purposes to ensure that all potentially exposed environmental and social sensitivities are acknowledged, described and considered in the development of the EP.

Modelling is also used to inform specific impact or consequence assessment by understanding the predicted location and extent of oil at different concentrations. There is no agreed exposure level below which environmental impacts will not occur so outputs should not be interpreted as a boundary. However, mapping areas that could be moderately impacted by a spill is a useful tool for impact or consequence assessment. The figures listed in Table 7-38 present the areas of hydrocarbon exposure (low, moderate and high thresholds) for surface waters, the water column (dissolved and entrained phases) and shorelines for both wells.

Table 7-38 Hydrocarbon exposure

Areas of hydrocarbon exposure	Whiptail-1A location	Mulloway-1 location
Surface waters	Figure 7-5	Figure 7-6
Shoreline	Figure 7-7	Figure 7-8
Water column – Dissolved	Figure 7-9	Figure 7-10
Water column – Entrained	Figure 7-11	Figure 7-12

Sections 10.1 and 10.2 of Appendix I present the stochastic modelling exposure results of all phases of oil (sea surface, shoreline and water column) to receptors (including BIAs, KEFs, marine parks, wetlands, and shorelines divided into local government areas). The environmental and social values and sensitivities associated with these receptors within the spill EMBA are described in Appendix A.

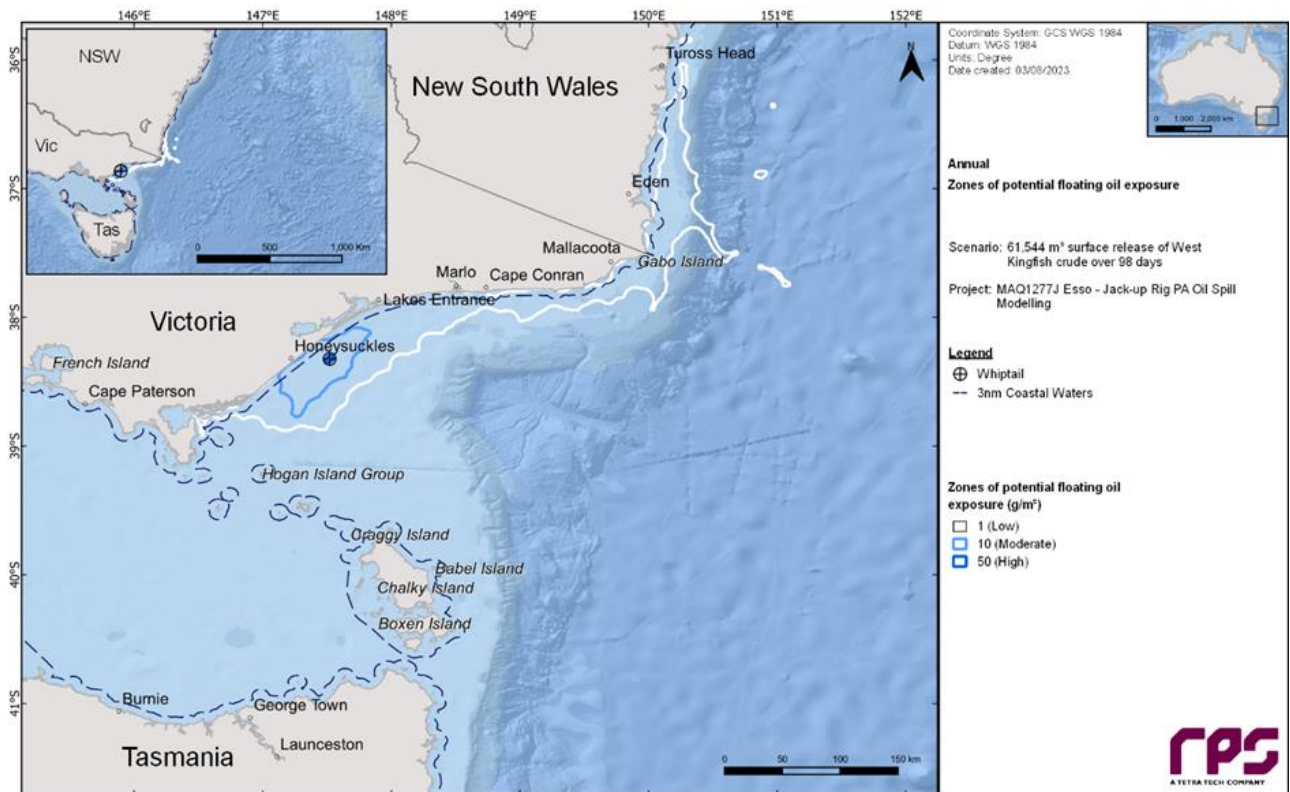


Figure 7-5 Loss of well control spill stochastic modelling output at Whiptail-1A for surface hydrocarbon exposure

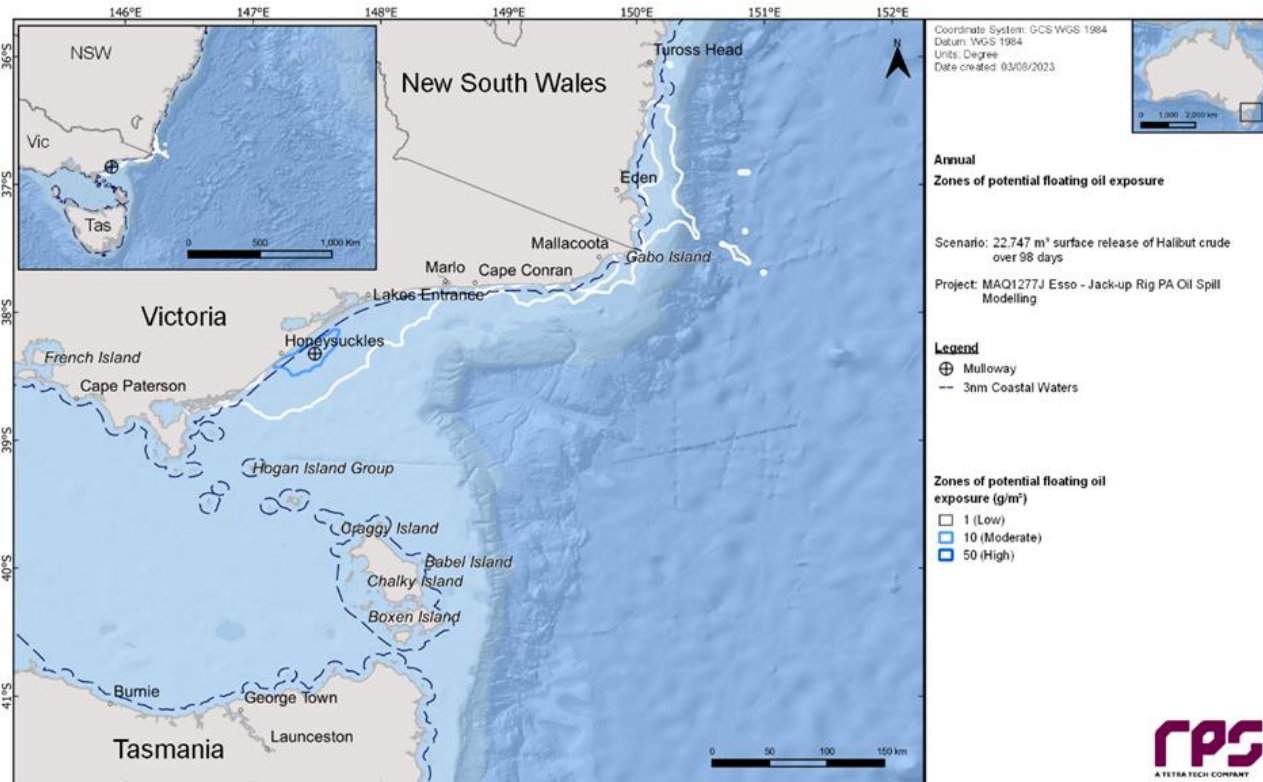


Figure 7-6 Loss of well control spill stochastic modelling output at Mulloway-1 for surface hydrocarbon exposure

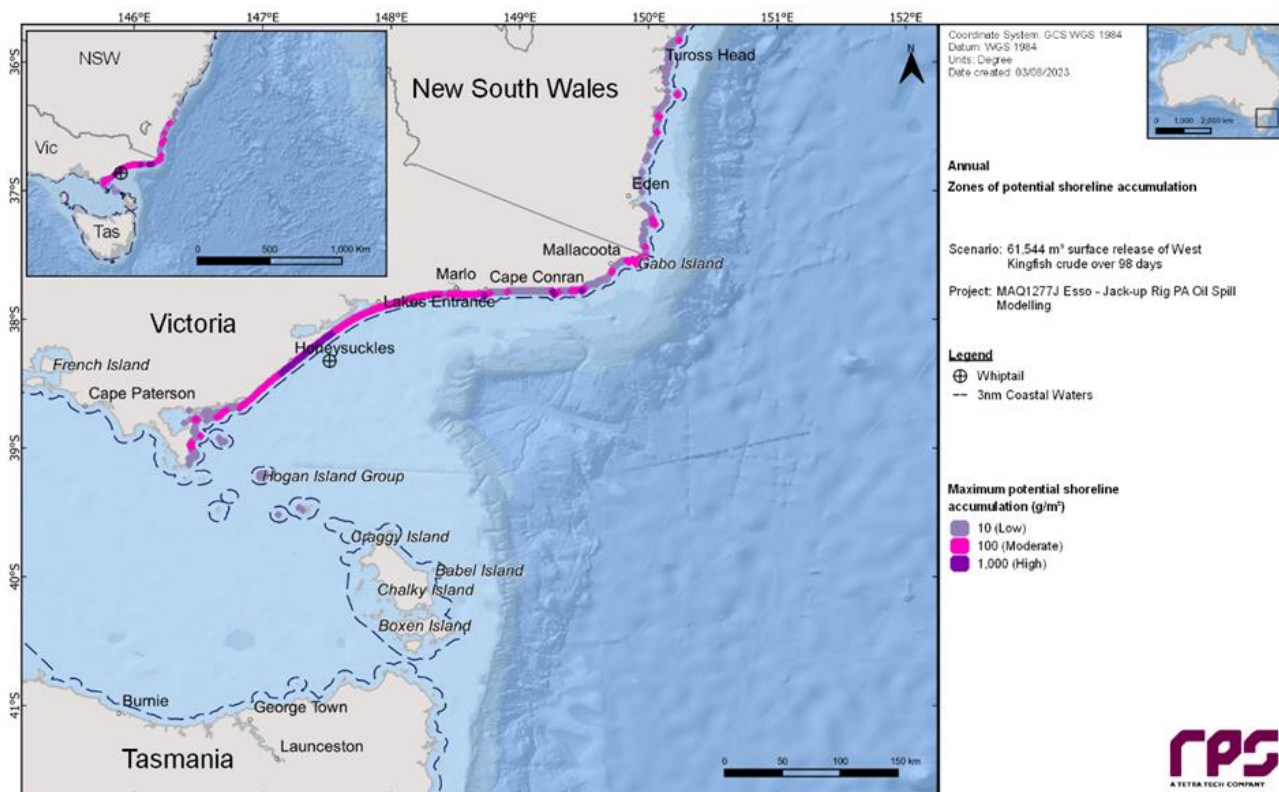


Figure 7-7 Loss of well control spill stochastic modelling output at Whiptail-1A for shoreline hydrocarbon exposure

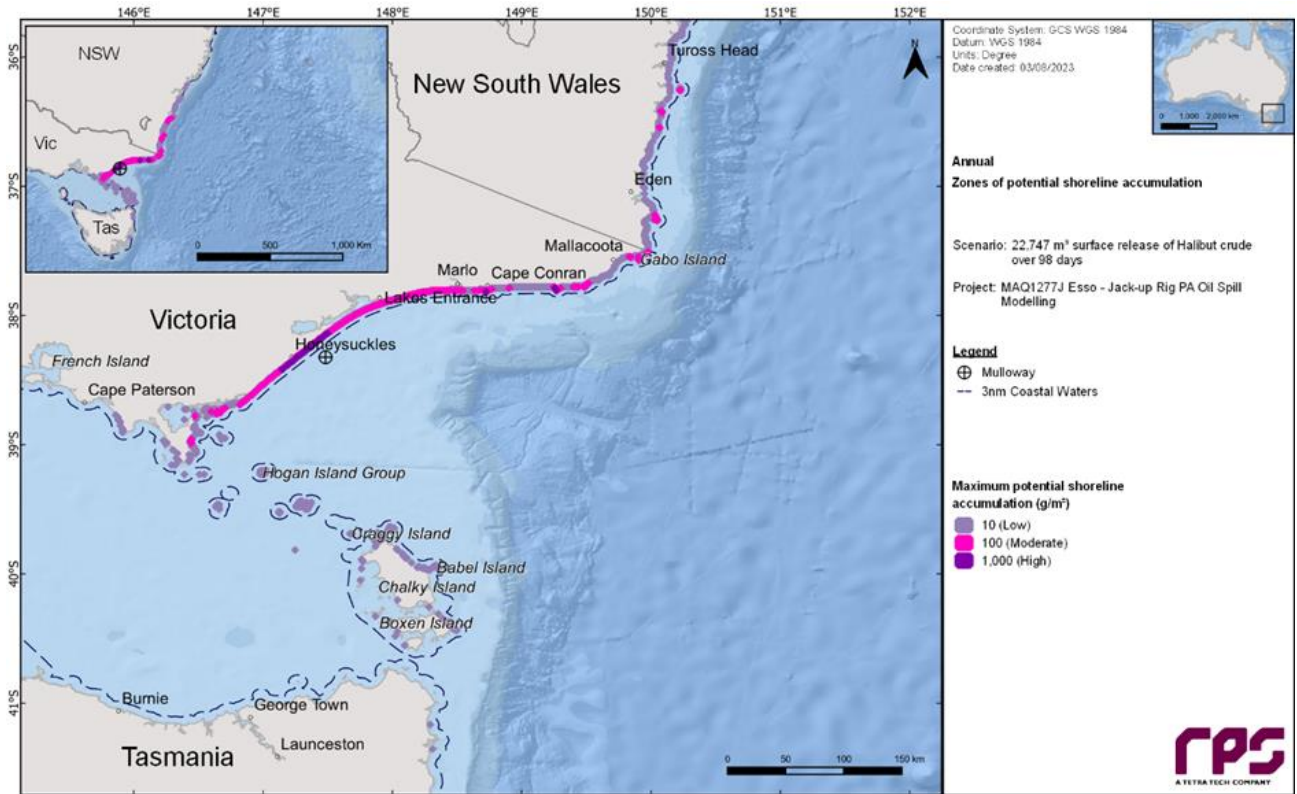


Figure 7-8 Loss of well control spill stochastic modelling output at Mulloway-1 for shoreline hydrocarbon exposure

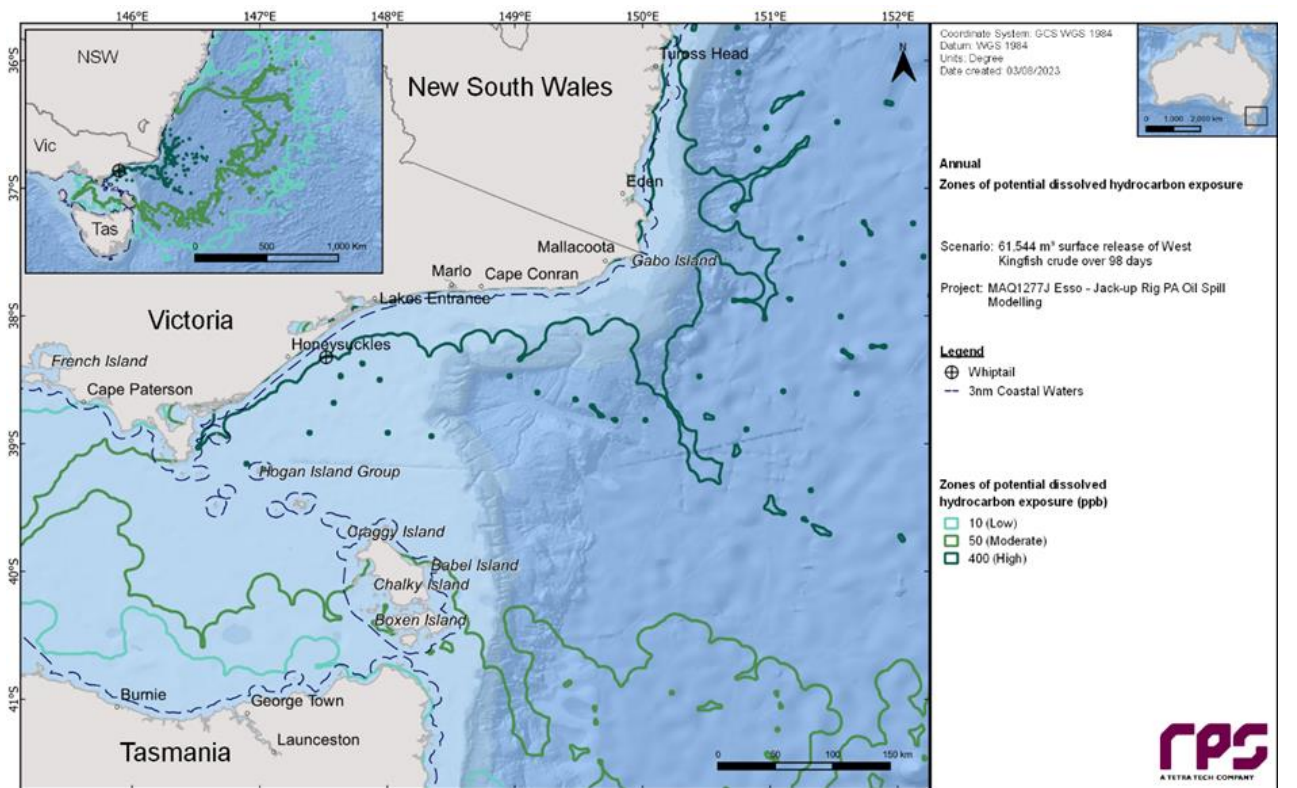


Figure 7-9 Loss of well control spill stochastic modelling output at Whiptail-1A for dissolved hydrocarbon exposure

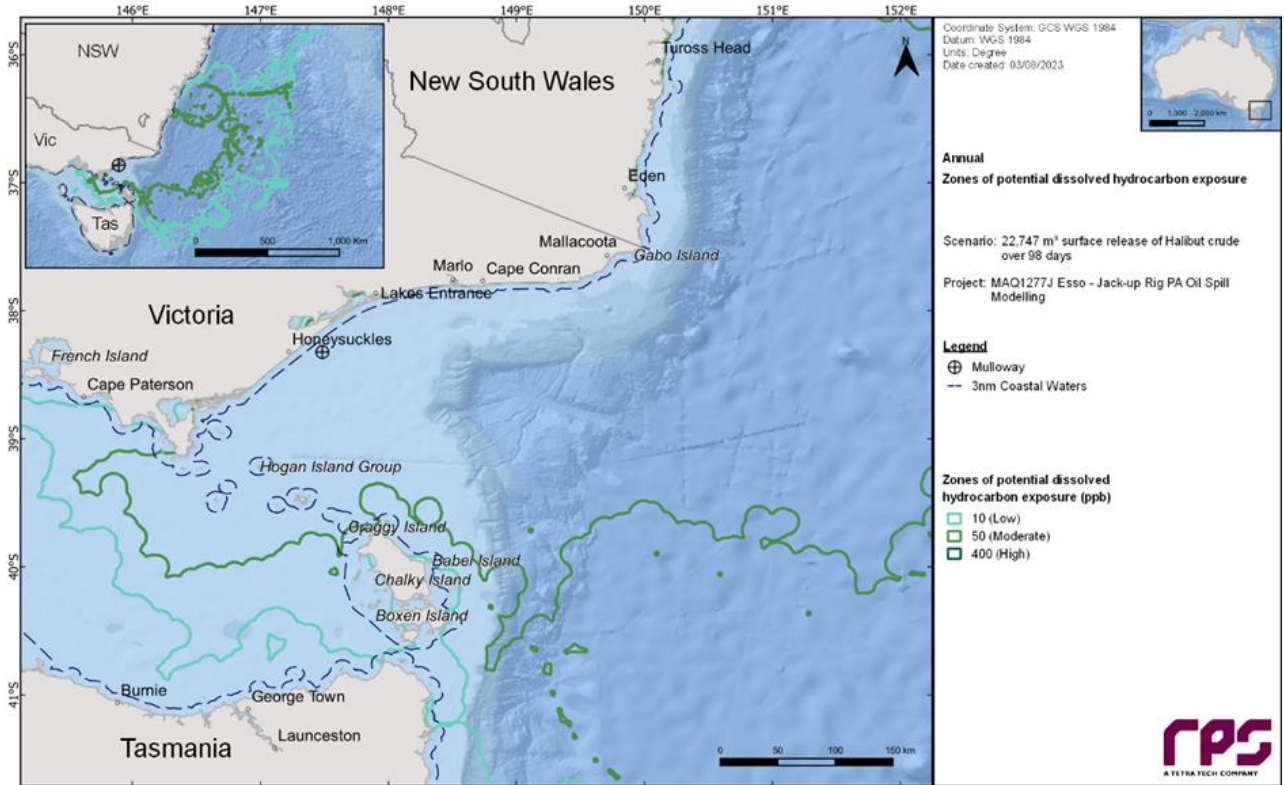


Figure 7-10 Loss of well control spill stochastic modelling output at Mulloway-1 for dissolved hydrocarbon exposure

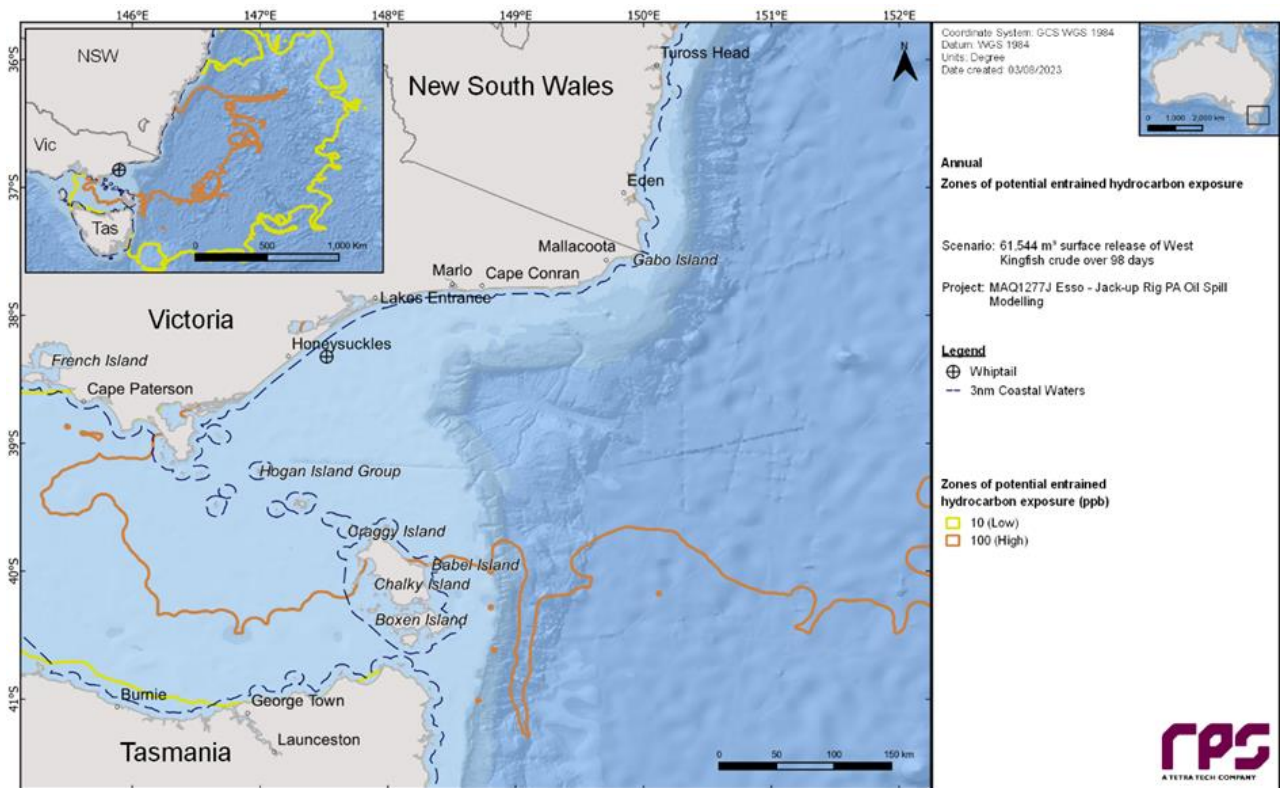


Figure 7-11 Loss of well control spill stochastic modelling output at Whiptail-1A for entrained hydrocarbon exposure

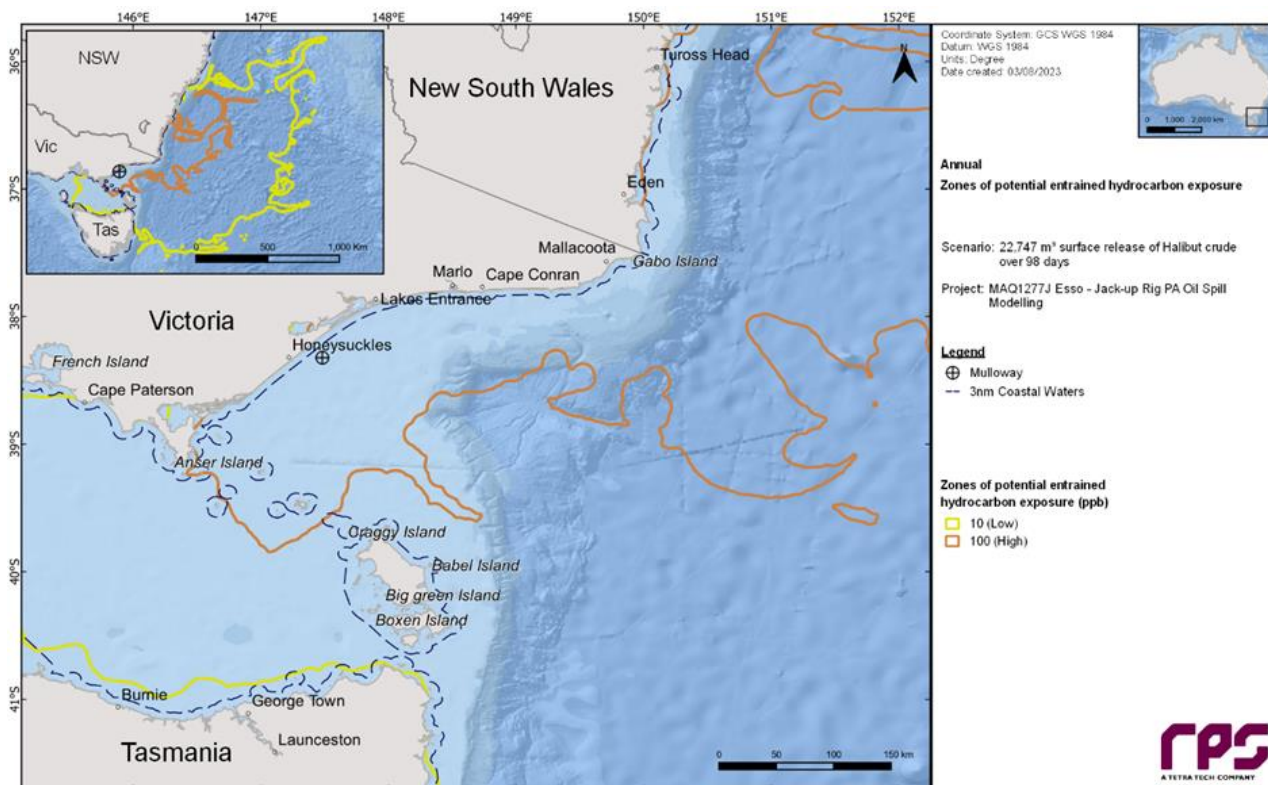


Figure 7-12 Loss of well control spill stochastic modelling output at Mulloway-1 for entrained hydrocarbon exposure

7.7.1.6 Risks of loss of containment of reservoir hydrocarbons

A LOC of reservoir hydrocarbons has the potential to result in the following impacts:

- injury/mortality to fauna
- change in habitat
- change to the function, interests or activities of other users.

The risks of hydrocarbon exposure to the receptors in the spill EMBA are described in Table 7-39.

The likelihood of LOWC is based on the Norwegian Institute of Technology records (as presented in the IOGP Risk Assessment Data Directory for Blowout Frequencies 2019 (IOGP, 2019), which presents the frequencies of blowouts and well release incident based on industry data. The likelihood for LOWC has been established based on the following assumptions:

- drilling and well operations are defined as being “of North Sea Standard” (“Operation performed with pressure control equipment (PCE) installed including shear ram and two barrier principle followed”) given the relevant Safety Case has been developed based on European standards and references various North Sea standards (e.g. NORSOK for barrier analysis, IOGP for relief well studies, Oil & Gas UK for relief well planning).

The specific controls to prevent LOWC are listed below (Section 7.7.4), which support the assumptions of the SINTEF data (North Sea Standard) and also include the measures taken to address the Whiptail-1A and Mulloway-1 well-specific status as described in Section 2.3.

Based on these assumptions the frequency of blowout is expected to be 2×10^{-4} for an oil well (0.0002, using the statistics for workover wells, considered to be the most analogous to P&A activities given there are no statistics for P&A related blowouts). This indicates the likelihood of the activity resulting in a LOWC (and the subsequent impacts to receptors) using Esso’s methodology is Category D (0.0001 to 0.001) (very unlikely).

7.7.2 Risk assessment

Table 7-39 presents the risk assessment for a LOC of hydrocarbons on the receptors in the spill EMBA.

Table 7-39 Risks of surface, shoreline and in-water hydrocarbon exposure to receptors in the spill EMBA

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
<p>Benthic habitats – Bare substrate, coral, seagrass, macroalgae, subtidal rocky reef</p>	<p><u>Bare substrate</u></p> <p>While this receptor represents the 'bare sand' areas offshore, it does provide habitat for benthic invertebrates (both infauna and macroinvertebrates).</p> <p>Unconsolidated mixed and particulate sediments are likely to be dominated by burrowing fauna (e.g. annelid worms, molluscs, echinoderms, crustaceans, cnidarians). Many of the organisms that live in these habitats are habitat modifiers (e.g. through burrows or shell production), stabilising and/or oxygenating the sediments around them, and providing additional ecological niches for colonisation by other fauna – increasing local biodiversity.</p> <p>Surveys undertaken after the Montara blowout found no obvious visual signs of major disturbance at Barracouta and Vulcan shoals (Heyward, Moore, Radford, & Colquhoun, 2010), which occur about 20-30 m below the water line in otherwise deep waters (generally >150 m water depth). Later sampling indicated the presence of low-level severely degraded oil at some shoals, though in the absence of pre-impact data, this could not be directly linked to the Montara spill. Levels of hydrocarbons in the sediments were, in any case, several orders of magnitude lower than levels at which biological effects become possible (Heyward, et al., 2012 (Gagnon & Rawson, 2011).</p> <p>Studies undertaken since the DWH incident have shown that fewer than 2 % of the more than 8000 sediment samples collected exceeded the US Environmental Protection Agency sediment toxicity benchmark for aquatic life, and these were largely limited to the area close to the wellhead (BP, 2015).</p> <p>Acute or chronic exposure through contact and/or digestion can result in toxicological risks to invertebrates. However, 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. Exposure can induce changes in burrowing depth into the substrate (which can lead to higher predation rates on some species) and can limit the growth, recruitment and</p>	<p>Exposure to in-water hydrocarbons is restricted to 30 m below the surface and therefore any potential impact to benthic habitats from in-water hydrocarbons will only occur in shallower nearshore waters. The zone of moderate exposure to dissolved hydrocarbons is predicted to extend into nearshore Victorian waters off the Gippsland coast.</p> <p>The predominant benthic habitat in the Gippsland Basin is bare substrate. However, known areas of seagrass which may be exposed include at Corner Inlet, Lakes Entrance, Bemm River Estuary and Tamboon Inlet. There is the potential that exposure could result in sub-lethal impacts, more so than lethal impacts, possibly because much of seagrasses' biomass is underground in their rhizomes (Zieman, Macko, & Mills, 1984). Seagrass in this region isn't considered a significant food source for marine fauna.</p> <p>Suitable hard substrate for macroalgal beds including the threatened giant kelp occur in areas such as around Gabo Island and within the Bemm River Estuary. Little is known about the effects of oil on giant kelp, but some studies (Edgar & Barrett, 2000) (Reed & Lewis, 1994) suggest that this species, like other macroalgae, may be some of the least sensitive marine species to oil exposure. As described opposite, intertidal species of macroalgae are more prone to direct exposure than subtidal beds, however sub-lethal toxicity effects from in-water (dissolved) hydrocarbons may be observed.</p> <p>Corals are not a common habitat type in the Gippsland Basin however solitary soft corals may occur where suitable hard substrate, such as rocky reef or man-made structures, is present. Sub-lethal toxicity effects may result from direct</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>reproductive capacity of some marine invertebrates (Fukuyama, Shigenaka, & VanBlaricom, 1988).</p> <p>Deep water benthic invertebrates are usually protected from oiling by the buoyant nature of hydrocarbons, although the depth of oil penetration is dependent on turbulence in the water column. Hydrocarbons can also reach the benthos through the settlement of oiled particles such as faeces, dead plankton or inorganic sand particles (Jewett, Dean, Smith, & Blanchard, 1999).</p> <p>Coral</p> <p>Corals are generally located in shallow and intertidal regions, where there is the potential for exposure to surface and in-water hydrocarbons.</p> <p>Experimental studies and field observations indicate all coral species are sensitive to the effects of oil, although there are considerable differences in the degree of tolerance between species. Differences in sensitivities may be due to the ease with which oil adheres to the coral structures, the degree of mucous production and self-cleaning, or simply different physiological tolerances.</p> <p>Direct contact of coral by hydrocarbons may impair respiration and also photosynthesis by symbiotic zooxanthellae (Van Dam, 2011). Coral gametes or larvae in the surface layer where they are exposed to the slick may also be fouled (Epstein, Bak, & Rinkevich, 2000). Physical oiling of coral tissue can cause a decline in metabolic rate and may cause varying degrees of tissue decomposition and death (Negri & Heyward, 2000). Oil may also cling to certain types of sediment causing oil to sink to the seafloor, covering corals in oiled sediment.</p> <p>Where corals come into direct contact with surface exposures (i.e. intertidal/shallow areas), they are more susceptible due to physical presence, than toxicity associated with dissolved oil components within the water column which, in some cases, may be more toxic than the floating surface slicks (Volkman, Miller, Revill, & Connell, 1994). A range of impacts is reported to result from toxicity including partial mortality of colonies, reduced growth rates, bleaching and reduced photosynthesis.</p>	<p>contact with in-water hydrocarbons or indirectly through feeding on contaminated prey (plankton).</p> <p>Direct contact with benthic species in the immediate vicinity of the release locations may occur. The benthic habitat of the OA is predominantly featureless muddy, gravelly sand and no areas of rocky reef have been observed. Recent studies have shown that infaunal taxa are similar across the Bass Strait but the contribution of each to the assemblage varies. Where hard substrate or points of attachment (facilities) are present, colonisation by epifauna occurs mostly in the form of sessile, invertebrate, filter feeders. The degree of colonisation varies between facilities however sponge beds have only been detected at Bream B.</p> <p>Benthic invertebrate species closer to shore may be affected, although these effects will be localised and temporary. Invertebrates of value (i.e. target species, see Commercial Fisheries) have been identified to include squid, crustaceans (rock lobster, crabs) and molluscs (scallops, abalone). Filter-feeding, sessile benthic invertebrates such as sponges, bryozoans, scallops, abalone and hydroids may be exposed to sub-lethal impacts however population level impacts are considered unlikely.</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment			
	<p>Laboratory and field studies have demonstrated that branching corals appear to have a higher susceptibility to hydrocarbon exposure than massive corals or corals with large polyps.</p> <p>Chronic effects of oil exposure have been consistently noted in corals and, ultimately, can kill the entire colony. Chronic impacts include histological, biochemical, behavioural, reproductive and developmental effects. Field studies of chronically polluted areas and manipulative studies in which corals are artificially exposed to oil show that some coral species tolerate oil better than other species (NOAA, 2010).</p> <p>Reproductive stages of corals have been found to be more sensitive to oil toxicity. Fertilisation of coral species has been observed to be completely blocked in staghorn coral (<i>Acropora tenuis</i>) at heavy fuel oil concentrations of 150 ppb (Lane & Harrison, 2002), with significant reductions in fertilisation of sea ginger (<i>A.millepora</i>) and <i>A. valida</i> at concentrations between 580 and 5800 ppb, in addition to developmental abnormalities and reduced survival of coral larvae at similar concentrations. Lower concentrations of less than 100 ppb crude oil were observed to inhibit larval metamorphosis in <i>A. millepora</i> (Negri & Heyward, 2000).</p> <p>Studies undertaken after the Montara incident included diver surveys to assess the status of Ashmore, Cartier and Seringapatam coral reefs. These found that other than a region-wide coral bleaching event caused by thermal stress (i.e. caused by sea water exceeding 32°C), the condition of the reefs was consistent with previous surveys, suggesting that any effects of hydrocarbons reaching these reefs was minor, transitory or sub-lethal and not detectable (Heyward, Moore, Radford, & Colquhoun, 2010). This is despite AMSA observations of surface slicks or sheen nears these shallow reefs during the spill (Heyward, Moore, Radford, & Colquhoun, 2010). Surveys in 2011 indicated that the corals exhibiting bleaching in 2010 had largely survived and recovered (Heyward, et al., 2012), indicating that potential exposure to hydrocarbons while in an already stressed state did not have any impact on the healthy recovery of the coral.</p> <p>In addition, surveys undertaken after the Montara blowout on the plateau areas of Barracouta and Vulcan shoals (Heyward, Moore, Radford, & Colquhoun, 2010), which occur about 20-30 m below the water line in otherwise deep waters (generally >150 m</p>	<p>The consequence of a LOWC on benthic habitats is assessed as Consequence Level II.</p>			
		Effect dimensions		Sensitivity dimensions	
		Duration	M	Irreplaceability	M-H
		Size/Scale	M	Vulnerability	M
		Intensity	M	Influence	M
		M		M	

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>water depth), and contain algae, hard coral and seagrass, found no obvious visual signs of major disturbance.</p> <p><u>Macroalgae</u></p> <p>Macroalgae are generally limited to growing on intertidal and subtidal rocky substrata in shallow waters to 10 m depth. As such, they may be exposed to subsurface and entrained and dissolved hydrocarbons, however, are susceptible to surface hydrocarbon exposure more so in intertidal habitats as opposed to subtidal habitats.</p> <p>Reported toxic responses to oils have included a variety of physiological changes to enzyme systems, photosynthesis, respiration, and nucleic acid synthesis (Lewis & Pryor, 2013). Despite the well-established pool of literature on macroalgae exposure to petroleum oils, very few investigations have reported effects on species that are common in Australian waters (Lewis & Pryor, 2013).</p> <p>Smothering, fouling and asphyxiation are some of the physical effects that have been documented from oil contamination in marine plants (Blumer, 1971) (Cintron, Lugo, Marinez, Cintron, & Encarnacion, 1981). In macroalgae, oil can act as a physical barrier for the diffusion of CO₂ across cell walls (O'Brien & Dixon, 1976). The effect of hydrocarbons however is largely dependent on the degree of direct exposure and how much of the hydrocarbon adheres to algae, which will vary depending on the oils physical state and relative 'stickiness'. The morphological features of macroalgae, such as the presence of a mucilage layer or the presence of fine 'hairs' will influence the amount of hydrocarbon that will adhere to the algae. A review of field studies conducted after spill events (Connell, Miller, & Farrington, 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 oiling. The rapid recovery of algae was attributed to the fact that for most algae, new growth is produced from near the base of the plant while the distal parts (which would be exposed to the oil contamination) are continually lost. Other studies have indicated that oiled kelp beds had a 90 % recovery within 3-4 years of impact, however full recovery to pre-spill diversity may not occur for long periods after the spill (French-McCay D. , 2004).</p> <p>Intertidal macroalgal beds are more prone to oil spills than subtidal beds because although the mucous coating prevents oil adherence, oil that is trapped in the upper</p>	

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>canopy can increase the persistence of the oil, which impacts upon site-attached species. Additionally, when oil sticks to dry fronds on the shore, they can become overweight and break as a result of wave action (IPIECA, 1995).</p> <p>The toxicity of hydrocarbons to macroalgae varies for the different macroalgal life stages, with water-soluble hydrocarbons more toxic to macroalgae (O'Brien & Dixon, 1976). Toxic effect concentrations for hydrocarbons and algae have varied greatly among species and studies, ranging 2-10,000,000 ppb (Lewis & Pryor, 2013). The sensitivity of gametes, larva and zygote stages however have all proven more responsive to petroleum oil exposure than adult growth stages (Lewis & Pryor, 2013).</p> <p>Macrophytes, including macroalgae, require light to photosynthesise. So, in addition to the potential impacts from direct smothering or exposure to entrained and dissolved hydrocarbons, the presence of entrained hydrocarbon within the water column can affect light qualities and the ability of macrophytes to photosynthesise.</p> <p>Exposure to in-water hydrocarbons poses the greatest threat to sensitive macroalgal assemblages, specifically the Giant Kelp Forests TEC, that grow on rocky reefs from the sea floor ≥8 m below sea level. The largest extent of this TEC is in Tasmanian coastal waters. Substrate on which this TEC may occur is also found in Victoria along the west coast of Wilson's Promontory and from Sydenham Inlet to Gabo Island (DSEWPAC, 2012b).</p> <p><u>Seagrass</u></p> <p>Seagrasses generally grow in sediments in 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. As such, they may be exposed to both surface and sub-surface hydrocarbons. Submerged vegetation in nearshore areas can be exposed to oil by direct contact (i.e. smothering) and by uptake by rhizomes through contaminated sediments. Exposure also can take place via uptake of hydrocarbons through plant membranes. In addition, seeds may be affected by contact with oil contained within sediments (NRDA, 2012).</p> <p>When seagrass leaves are exposed to petroleum oil, sub-lethal quantities of the soluble fraction can be incorporated into the tissue, causing a reduction in tolerance to other</p>	

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>stress factors (Zieman, Macko, & Mills, 1984). The toxic components of petroleum oils are thought to be the PAH, which are lipophilic and therefore able to pass through lipid membranes and tend to accumulate in the thylakoid membranes of chloroplasts (Ren, Huang, McConkey, Dixon, & Greenberg, 1994).</p> <p>As such, the susceptibility of seagrasses to hydrocarbon spills will depend largely on distribution. Deeper communities will be protected from oiling under all but the most extreme weather conditions. Shallow seagrasses are more likely to be affected by dispersed oil droplets or, in the case of emergent seagrasses, direct oiling. Theoretically, intertidal seagrass communities would be the most susceptible because the leaves and rhizomes may both be affected.</p> <p><u>Subtidal rocky reefs</u></p> <p>Nearshore and offshore subtidal reef habitats are dominated by seaweeds, mobile invertebrates and fish. Potential impacts to sensitive receptors related to these reefs discussed in the appropriate sections. It was observed that the release of large quantities of fuel oil during the grounding of the Iron Baron did not substantially affect populations of subtidal reef associated organisms (Edgar & Barrett, 1995).</p>	
Plankton	<p>Plankton are found in nearshore and open waters beneath the surface in the water column. 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 floating hydrocarbons but plankton also has the potential to be directly affected by in-water hydrocarbons as a result of toxicity effects.</p> <p>Phytoplankton are typically not sensitive to the impacts of oil, though they do accumulate it rapidly (Hook, Batley, Holloway, Irving, & Ross, 2016) due to their small size and high surface area to volume ratio. Oil can affect the rate of photosynthesis and inhibit growth in phytoplankton, 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 100ppb for exposure to weathered oil (González, et al., 2009). In addition, the potential for effects to photosynthesis (i.e. temporary suppression of primary production) from shading caused by continuous surface slicks may have</p>	<p>Plankton are likely to be exposed to in-water (dissolved) hydrocarbons above the moderate exposure threshold within a zone (up to approximately 5 km in width) extending parallel to the Gippsland coastline (for up to approximately 250 km from the release location). Plankton are at their highest concentrations below surface waters (e.g. 60 m water depth for phytoplankton during the day) and undertake a vertical migration which would likely reduce their potential for (and duration of) exposure to dissolved hydrocarbons in the surface layer of the water column.</p> <p>The impact to plankton is therefore predicted to be Level III with potential effects on the food web recognised.</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>implications for consumers of phytoplankton (Hook, Batley, Holloway, Irving, & Ross, 2016), though a prolonged surface coverage over an extensive area would be required. During the DWH oil spill it was observed that plankton and other surface material were found to be sinking at rates of more than 10 times the normal level. It was hypothesised that the weathered spilled oil catalysed clumping of organic particles (Schrope, 2013). It is currently unclear as to whether this effect was caused by the chemical characteristics of the weathered oil, or a bacterial effect.</p> <p>Zooplankton (microscopic animals such as rotifers, copepods and krill that feed on phytoplankton) are vulnerable to hydrocarbons (Hook, Batley, Holloway, Irving, & Ross, 2016). Water column organisms that come into contact with oil risk exposure through ingestion, inhalation and dermal contact (NRDA, 2012), which can cause immediate mortality or declines in egg production and hatching rates along with a decline in swimming speeds (Hook, Batley, Holloway, Irving, & Ross, 2016).</p> <p>Plankton are generally abundant in the upper layers of the water column and is the basis of the marine food web, so an oil spill in any one location is unlikely to have long-lasting impacts on plankton populations at a regional level. Reproduction by survivors or dispersion from unaffected areas (via sea surface currents) is likely to rapidly replenish losses (Abbriano, et al., 2011). Plankton have life cycles based on rapid reproduction with levels of high productivity. It is also in the nature of plankton to be dispersive. Oil spill field observations show minimal or transient effects on plankton (Abbriano, et al., 2011). Once background water quality is re-established, plankton takes weeks to months to recover (ITOPF, 2011). Plankton found in open waters of the exposure zone is expected to be widely represented within waters of the wider Bass Strait region and generally across all waters in the southeastern offshore region, which aids in the re-establishment of communities.</p>	
Fish	<p>Fish can be exposed to oil through a variety of pathways, including: direct dermal contact (e.g. swimming through oil); ingestion (e.g. directly or via oil-affected prey/foods); and inhalation (e.g. elevated dissolved contaminant concentrations in water passing over the gills). Fish are generally considered vulnerable to oil spills because they inhabit areas coincident with oil exploration and production and those areas that may be subsequently impacted by an oil spill; including coral reefs,</p>	<p>The release locations are located in open waters however being between approximately 15 and 25 km from shore floating oil is predicted to extend into shallower nearshore waters along the Ninety Mile Beach and eastwards towards Gabo Island. Moderate surface exposure is predicted to cover a maximum area of approximately 40 km². The zone of</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>seagrasses, nearshore areas, deep offshore areas, pelagic habitats and demersal habitats (Moore & Dwyer, 1974) (Gundlach & Hayes, 1978). Of the potential toxicants, monoaromatic and PAH are generally regarded as the most toxic to fish.</p> <p><u>Surface oil</u></p> <p>Since fish and sharks do not generally break the sea surface, the exposure 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., 2004) . As a result, wide-ranging pelagic fish of the open ocean generally are not highly susceptible to impacts from surface hydrocarbons. Adult fish kills reported after oil spills occur mainly to shallow water, near-shore benthic species (Volkman, et al., 2004). Following the DWH incident, it was suggested that Whale sharks may be vulnerable to oiling of gills if exposed to the oil. The tendency of Whale sharks to feed close to surface waters will increase the likelihood of exposure to surface slicks and elevated hydrocarbon concentrations beneath slicks.</p> <p><u>In-water oil</u></p> <p>Exposure to hydrocarbons entrained or dissolved in the water column can be toxic to fishes. Studies have shown a range of impacts including changes in abundance, decreased size, inhibited swimming ability, changes to oxygen consumption and respiration, changes to reproduction, immune system responses, DNA damage, visible skin and organ lesions, and increased parasitism. However, many fish species can metabolize toxic hydrocarbons, which reduces the risk of bioaccumulation (NRDA, 2012). Pelagic species are also generally highly mobile and as such are not likely to suffer extended exposure (e.g. >96 hours) at concentrations that would lead to chronic effects due to their patterns of movement. Demersal fish are not expected to be impacted given the presence of in-water hydrocarbons in surface layers only.</p> <p>Fish are most vulnerable to hydrocarbon discharges during their embryonic, larval and juvenile life stages. Oil exposure may result in decreased spawning success and abnormal larval development. 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 areal extent of the spill. As egg/larvae dispersal is widely</p>	<p>moderate exposure to dissolved hydrocarbons is predicted to extend into nearshore Victorian waters.</p> <p>Shallow inshore fish species including various syngnathids (seahorses, pipefish, pipehorses and seadragons) are less likely to be able to move away from surface or in-water oils and therefore may be exposed to elevated levels or for longer periods. Their habitats are typically widespread however any impacts are expected to be local on individual organism levels.</p> <p>Although pelagic fish species may be exposed to moderate levels of dissolved oil their mobile, transitory characteristics reduce the risk of prolonged exposure. Large-scale population level effects following a LOC on fish species, abundances or assemblage composition would be unlikely due to the wide geographical distribution of many fish in Bass Strait and the potential for rapid , especially in the cases of widely distributed relatively common pelagic species. Deep water demersal fish are not expected to be impacted given the presence of in-water hydrocarbons in upper layers (0-30 m) of the water column only.</p> <p>The zone of moderate exposure to dissolved hydrocarbons may contact the great white shark distribution and breeding BIAs and grey nurse shark foraging and migration BIAs. Pelagic species of shark are at greatest risk of being exposed to oil following a LOC given their wide foraging areas and risks of consuming contaminated prey. Great white sharks are known to aggregate near Ninety Mile Beach and philopatric characteristics means they may return to the place of birth to breed even if habitats are contaminated. This species is widely distributed and thus unlikely to suffer ecologically important declines in abundance.</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment																				
	<p>distributed in the upper layers of the water column it is expected that current induced drift will rapidly replace any oil affected populations.</p>	<p>The consequences to fish and sharks are assessed as Consequence Level II, taking into consideration the potential impacts to threatened species such as the great white shark and grey nurse shark.</p> <table border="1"> <thead> <tr> <th colspan="2">Effect Dimensions</th> <th colspan="2">Sensitivity Dimensions</th> </tr> </thead> <tbody> <tr> <td>Duration</td> <td>M</td> <td>Irreplaceability</td> <td>M</td> </tr> <tr> <td>Size/Scale</td> <td>M</td> <td>Vulnerability</td> <td>H</td> </tr> <tr> <td>Intensity</td> <td>M</td> <td>Influence</td> <td>M</td> </tr> <tr> <td colspan="2">M</td> <td colspan="2">M-- H</td> </tr> </tbody> </table>	Effect Dimensions		Sensitivity Dimensions		Duration	M	Irreplaceability	M	Size/Scale	M	Vulnerability	H	Intensity	M	Influence	M	M		M-- H	
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<p>Birds</p>	<p>Seabirds and shorebirds are sensitive to the impacts of oiling, with their vulnerability arising from the fact that they cross the air-water interface to feed, while their shoreline habitats may also be oiled (Hook, Batley, Holloway, Irving, & Ross, 2016). Species that raft together in large flocks on the sea surface are particularly at risk (ITOPF, 2011).</p> <p><u>Sea surface oil</u></p> <p>Birds foraging at sea have the potential to directly interact with oil on the sea surface some considerable distance from breeding sites in the course of normal foraging activities. Seabird species most at risk include those that readily rest on the sea surface (e.g. shearwaters) and surface plunging species (e.g. terns, boobies). As seabirds are a top order predator, any impact on other marine life (e.g. pelagic fish) may disrupt and limit food supply both for the maintenance of adults and the provisioning of young.</p> <p>For seabirds, direct contact with hydrocarbons can foul feathers, which may subsequently result in hypothermia due to a reduction in the ability of the bird to thermo-regulate and impair waterproofing. A bird suffering from cold, exhaustion and a loss of buoyancy may also dehydrate, drown or starve (DSEWPAC, 2011). Increased</p>	<p>A number of listed threatened and/or migratory seabird species may occur in the area at or above the moderate surface threshold exposure. There are foraging BIA's for several species of petrels, shearwater and albatross and breeding BIAs for the White faced storm petrel and Little penguin which overlap with this exposed area. Moderate surface exposure is predicted to cover a maximum area of approximately 40 km².</p> <p>Seabirds rafting, resting, diving or feeding at sea have the potential to come into contact with surface oil, ranging from moderate to high exposure, as such, acute or chronic toxicity impacts (death or long-term poor health) to seabirds are possible. Most species tend to forage on their own, though large feeding flocks will gather at rich or passing food sources.</p>																				

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	<p>heat loss as a result of a loss of water-proofing results in an increased metabolism of food reserves in the body, which is not countered by a corresponding increase in food intake, may lead to emaciation (DSEWPAC, 2011). The greatest vulnerability in this case occurs when birds are feeding or resting at the sea surface (Peakall, Wells, & Mackay, 1987). In a review of 45 actual marine spills, there was no correlation between the numbers of bird deaths and the volume of the spill (Burger, 1993).</p> <p>Penguins may be especially vulnerable to an oil spill because they do not fly and therefore spend a high proportion of their time in the water when away from resting and breeding locations and readily lose insulation and buoyancy if their feathers are oiled (Hook, Batley, Holloway, Irving, & Ross, 2016). This species also has strong attachment to its natal area (Colombelli - Négrel, 2016) and consequently, birds are likely to retain a strong attachment to a site even if the site and adjacent waters are severely contaminated by oil. The Iron Baron vessel spill (325 MT of bunker fuel in Tasmania in 1995) is estimated to have resulted in the death of up to 20,000 penguins (Hook, Batley, Holloway, Irving, & Ross, 2016).</p> <p><u>Shoreline oil</u></p> <p>Shorebirds are likely to be exposed to oil when it directly impacts the intertidal zone and onshore due to their feeding habitats. Foraging shorebirds will be at potential risk of both direct impacts through contamination of individual birds (e.g. fouling of feathers) and indirect impacts (e.g. fouling and/or a reduction in prey items) (Clarke & Herrod, 2016). Birds that are coated in oil can also suffer from damage to external tissues, including skin and eyes, as well as internal tissue irritation in their lungs and stomachs.</p> <p>Breeding birds (both seabirds and shorebirds) may be exposed to oil via direct contact or the contamination of the breeding habitat (e.g. shores of islands) (Clarke & Herrod, 2016). Bird eggs may subsequently be damaged if an oiled adult sits on the nest. Fresh crude was shown to be more toxic than weathered crude, which had a medial lethal dose of 21.3 mg per egg. Studies of contamination of duck eggs by small quantities of crude oil, mimicking the effect of oil transfer by parent birds, have been shown to result in mortality of developing embryos.</p>	<p>The length of shoreline predicted to be exposed to shoreline loading of hydrocarbons that may have biological impacts to birds is approximately 550 km above the moderate threshold and 250 km above the high threshold. This section of coastline comprises mostly wide sandy beaches that provide nesting habitat for species such as Hooded plovers and terns or rocky islands and headlands that provide habitat for seabird colonies (such as little penguin, petrels and albatrosses).</p> <p>The little penguin is not considered at risk globally, but some colonies are at risk on a regional scale (Cannell, et al., 2016) and declines in the status of this species have been reported from Tasmania (Stevenson & Woehler, 2007). Oil concentrations at the moderate to high threshold are predicted to accumulate on the shorelines of Gabo Island, which supports the world’s largest little penguin colony, The Skerries and Tasmanian Bass Strait islands such as Curtis Island potentially impacting local populations. Under certain metocean conditions the zone of moderate surface exposure is predicted to overlap with the little penguin breeding BIA.</p> <p>There are many listed threatened and migratory shorebird species likely to occur in the area overlapping the extent of exposed shoreline. In the event of a LOWC, these birds are potentially at risk of shoreline exposure. Birds are not likely to be significantly affected by in-water concentrations of hydrocarbons due to their limited exposure time in the water column. Shorebirds foraging in intertidal areas or along the high tide mark and splash zone, or nest in coastal areas particularly close to the high-water mark, are most at risk of exposure effects. Because the zone of moderate in-water exposure extends into nearshore waters, foraging shorebirds may be indirectly impacted by the loss of invertebrate prey.</p>

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	<p>Toxic effects on birds may result where oil is ingested as the bird attempts to preen its feathers, or via consumption of oil-affected prey. Whether this toxicity ultimately results in mortality will depend on the amount consumed and other factors relating to the health and sensitivity of the particular bird species.</p> <p>The threshold thickness of oil that could impart a lethal dose to an individual wildlife species is 10 µm (~10 g/m²) (Engelhardt, Petroleum effects on marine mammals, 1983) (Clark, 1984) (Geraci & St. Aubin, 1988) (Jenssen, 1994). A layer 25 µm thick would be harmful for most birds that contact the slick (Scholten, et al., 1996).</p>	<p>The populations of both seabird and shorebird species have a wide geographic range, meaning that impacts to individuals at one location will not necessarily extend to populations at other un-impacted locations.</p> <p>Consequently, the potential consequence of risks to seabirds and shorebirds from a LOWC are considered to be Consequence Level II.</p> <table border="1"> <thead> <tr> <th colspan="2">Effect dimensions</th> <th colspan="2">Sensitivity Dimensions</th> </tr> </thead> <tbody> <tr> <td>Duration</td> <td>M</td> <td>Irreplaceability</td> <td>H</td> </tr> <tr> <td>Size/Scale</td> <td>M</td> <td>Vulnerability</td> <td>H</td> </tr> <tr> <td>Intensity</td> <td>M</td> <td>Influence</td> <td>H</td> </tr> <tr> <td colspan="2">M</td> <td colspan="2">H</td> </tr> </tbody> </table>	Effect dimensions		Sensitivity Dimensions		Duration	M	Irreplaceability	H	Size/Scale	M	Vulnerability	H	Intensity	M	Influence	H	M		H	
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<p>Marine reptiles-- Turtles</p>	<p>Marine turtles are vulnerable to the effects of oil at all life stages; eggs, hatchlings, juveniles, and adults. Oil exposure affects different turtle life stages in different ways; and each turtle life stage frequents a habitat with varied potential to be impacted during an oil spill. Several aspects of turtle biology and behaviour place them at particular risk, including a lack of avoidance, indiscriminate feeding in convergence zones, and large pre-dive inhalations.</p> <p>Marine turtles can be exposed to oil externally (e.g. swimming through oil slicks) or internally (e.g. swallowing the oil, consuming oil affected prey, or inhaling of volatile oil related compounds).</p> <p><u>Surface oil</u></p> <p>Effects of oil on turtles include increased egg mortality and developmental defects; direct mortality due to oiling in hatchlings, juveniles, and adults; and negative impacts to the skin, blood, digestive and immune systems, and salt glands. Oil can enter cavities</p>	<p>While marine turtles, including threatened species, are known to occur in the area potentially exposed to hydrocarbons above surface and in-water (dissolved) moderate exposure thresholds they are not noted to reside or aggregate in significant numbers, and there are no recognized BIAs in the region.</p> <p>There are no turtle nesting beaches along the Gippsland or southern New South Wales coastlines, so impacts to turtles from shoreline oiling will not occur.</p> <p>Although the effects of hydrocarbons on marine reptiles, specifically turtles can be severe, the low density of turtles expected in the region (due to lack of BIA or aggregations) suggests that a LOWC would affect individuals rather than</p>																				

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment			
	<p>such as the eyes, nostrils, or mouth; and oil covering their bodies may interfere with breathing because they inhale large volumes of air to dive.</p> <p>Experiments on physiological and clinical pathological effects of hydrocarbons on loggerhead turtles (~15–18 months old) showed that the turtles' major physiological systems were adversely affected by both chronic and acute exposures (96 hour exposure to a 0.05 cm layer of South Louisiana crude oil versus 0.5 cm for 48 hours) (Lutcavage, Lutz, Bossart, & Hudson, 1995). Recovery from the sloughing skin and mucosa took up to 21 days, increasing the turtle's susceptibility to infection or other diseases, such as fibropapilloma (Lutcavage, Lutz, Bossart, & Hudson, 1995).</p> <p>Records of oiled wildlife during spills rarely include marine turtles, even from areas where they are known to be relatively abundant (Short, 2011). An exception to this was the large number of marine turtles collected (613 dead and 536 live) during the DWH incident in the GoM, although many of these animals did not show any sign of oil exposure (NOAA, 2013). Of the dead turtles found, 3.4 % were visibly oiled and 85% of the live turtles found were oiled (NOAA, 2013). Of the captured animals, 88 % of the live turtles were later released, suggesting that oiling does not inevitably lead to mortality.</p> <p><u>Shoreline oil</u></p> <p>Turtles may experience oiling impacts on nesting beaches and eggs through chemical exposures resulting in decreased survival to hatching and developmental defects in hatchlings. Adult females crossing an oiled beach could cause external oiling of the skin and carapace; nothing that most oil is deposited at the high-tide line, and most turtles nest well above this level. Studies on freshwater snapping turtles showed uptake of PAH from contaminated nest sediments, but no impacts on hatching success or juvenile health following exposure of eggs to dispersed weathered light crude (Rowe, Mitchelmore, & Baker, 2009). However, other studies found evidence that exposure of freshwater turtle embryos to PAH results in deformities (Bell, Spotila, & Congdon, 2006 (Van Meter, Spotila, & Avery, 2006). Turtle hatchlings may be more vulnerable to smothering as they emerge from the nests and make their way over the intertidal area to the water (AMSA, 2015). Hatchlings that contact oil residues while crossing a beach can exhibit a range of effects including impaired movement and bodily functions</p>	population level. Consequently, the potential impacts to marine reptiles are considered to be Consequence Level II.			
		Effect dimensions		Sensitivity dimensions	
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Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>(Milton, Lutz, & Shigenaka, 2003). Hatchlings sticky with oily residues may also have more difficulty crawling and swimming, rendering them more vulnerable to predation.</p> <p>It should be noted that the threat and relative impacts of an unplanned discharge on some marine reptile species are considered less damaging than other stressors. Report cards produced on protected marine reptiles in Australia generally ranked oil pollution as either 'not of concern' or 'of less concern' depending on the marine region (DSEWPAC, 2012b).</p>	
<p>Marine mammals (pinnipeds)</p>	<p>Pinnipeds are directly at risk from impacts associated with the exposure to surface, shoreline and in-water hydrocarbons.</p> <p><u>Sea surface oil</u></p> <p>Pinnipeds are vulnerable to sea surface exposures in particular given they spend much of their time on or near the surface of the water, as they need to surface every few minutes to breathe, and regularly haul out on to beaches. Pinnipeds are also sensitive as they will stay near established colonies and haul-out areas, meaning they are less likely to practise avoidance behaviours. Seals, sea lions and fur seals have been observed swimming in oil slicks during a number of documented spills (Geraci & St. Aubin, 1988).</p> <p>As a result of exposure to surface oils, pinnipeds, with their relatively large, protruding eyes are particularly vulnerable to effects such as irritation to mucous membranes that surround the eyes and line the oral cavity, respiratory surfaces, and anal and urogenital orifices. Seals appear not to be very sensitive to contact with oil, but instead to the toxic impacts from the inhalation of volatile components (Hook, Batley, Holloway, Irving, & Ross, 2016).</p> <p>For some pinnipeds, fur is an effective thermal barrier because it traps air and repels water. Petroleum stuck to fur reduces its insulative value by removing natural oils that waterproof the pelage. Consequently, the rate of heat transfer through fur seal pelts can double after oiling (Geraci & St. Aubin, 1988), adding an energetic burden to the animal. It is suggested (Kooyman, Gentry, & McAllister, 1976) that in fact, fouling of approximately one-third of the body surface resulted in 50% greater heat loss in fur seals immersed in water at various temperatures. Fur seals are particularly vulnerable</p>	<p>Both the New Zealand fur seal (<i>Arctocephalus forsteri</i>) and the Australian fur seal are listed marine species with habitat and breeding sites known to occur in areas potentially exposed to surface, in-water and shoreline oil above the moderate threshold. These areas are not identified as critical habitat and there are no identified BIAs for fur seals in the region.</p> <p>Both the Australian and New Zealand fur seals are at risk to surface oil while at sea and shoreline accumulated oil at haul out sites or rookeries. The direct effect to pups from exposure to shoreline oil at $\geq 100 \text{ g/m}^2$ could result in mortality, while indirect effects could be negative behavioural changes associated with the smell of shoreline oil or contamination of prey.</p> <p>The Australian fur seal is vulnerable to a population decline following a LOWC because breeding locations are restricted to the islands of Bass Strait. It is predicted that major rookeries on The Skerries and Gabo Island may be exposed to accumulated shoreline oil at moderate to high thresholds. Oil is also predicted to accumulate at the moderate threshold on islands off Wilsons Promontory which also support significant breeding populations.</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment																				
	<p>due to the likelihood of oil adhering to fur. Heavy oil coating and tar deposits on fur seals may result in reduced swimming ability and lack of mobility out of the water.</p> <p><u>In-water oil</u></p> <p>Ingested hydrocarbons can irritate or destroy epithelial cells that line the stomach and intestine, thereby affecting motility, digestion and absorption.</p> <p>However, pinnipeds have been found to have the enzyme systems necessary to convert absorbed hydrocarbons into polar metabolites, which can be excreted in urine (Engelhardt, 1982) (Addison & Brodie, 1984) (Addison, Brodie, Edwards, & Sadler, 1986). Benzene and naphthalene ingested by seals is quickly absorbed into the blood through the gut, causing acute stress, with damage to the liver considered likely. If ingested in large volumes, hydrocarbons may not be completely metabolized, which may result in death (Volkman, Miller, Revill, & Connell, 1994).</p> <p><u>Shoreline oil</u></p> <p>Breeding colonies (used to birth and nurse until pups are weaned) are particularly sensitive to hydrocarbon spills (Higgins & Gass, 1993). Species that rely on fur to regulate their body temperature (such as fur seals) are the most vulnerable to oil as the animals may die from hypothermia or overheating, depending on the season, if the fur becomes matted with oil (ITOPF, 2011).</p> <p>It is reported that most pinnipeds scratch themselves vigorously with their flippers and do not lick or groom themselves, so are less likely to ingest oil from skin surfaces (Geraci & St. Aubin, 1988). However, mothers trying to clean an oiled pup may ingest oil. The Long-Term Environmental Impact and Recovery report for the Iron Barren oil spill concluded that “The number of pups born at Tenth Island in 1995 was reduced when compared to previous years. There was a strong relationship between the productivity of the seal colonies and the proximity of the islands to the oil spill wherein the islands close to the spill showed reduced pup production and those islands more distant to the oil spill did not” (Tasmanian SMPC, 1999).</p> <p>Pinnipeds are further at risk because they appear to rely on scent to establish a mother-pup bond (Sandegren, 1970) (Fogden, 1971) and consequently oil-coated pups may not be recognizable to their mothers. This is only theorised, with studies and research</p>	<p>These species are particularly vulnerable to oil because oil is believed to adhere more readily to their coats. Such oiling can have significant effects to this function if foraging in areas with fresh oil. Fur seals are known to aggregate around offshore oil and gas facilities where, in the event of a release, exposure to fresh oil would occur.</p> <p>The consequence of a LOWC on pinnipeds is assessed as Consequence Level II.</p> <table border="1"> <thead> <tr> <th colspan="2">Effect dimensions</th> <th colspan="2">Sensitivity dimensions</th> </tr> </thead> <tbody> <tr> <td>Duration</td> <td>H</td> <td>Irreplaceability</td> <td>M</td> </tr> <tr> <td>Size/Scale</td> <td>H</td> <td>Vulnerability</td> <td>L</td> </tr> <tr> <td>Intensity</td> <td>H</td> <td>Influence</td> <td>M</td> </tr> <tr> <td colspan="2">H</td> <td colspan="2">M</td> </tr> </tbody> </table>	Effect dimensions		Sensitivity dimensions		Duration	H	Irreplaceability	M	Size/Scale	H	Vulnerability	L	Intensity	H	Influence	M	H		M	
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	<p>indicating interaction between mothers and oiled pups were normal (Davis & Anderson, 1976) (Davies, 1949) (Shaughnessy & Chapman, 1984).</p> <p>Australian sea lions have naturally poor recovery abilities due to unusual reproductive biology and life history (DSEWPAC, 2013). Due to the extreme philopatry of females and limited dispersal of males between breeding colonies, the removal of only a few individuals annually may increase the likelihood of decline and potentially lead to the extinction of some of the smaller colonies. Note: Australian sea lions are endemic to Australia, found only in South Australia and Western Australia (DSEWPAC, 2013).</p>	
<p>Marine mammals (cetaceans)</p>	<p>Whales and dolphins can be exposed to the chemicals in oil through:</p> <ul style="list-style-type: none"> • internal exposure by consuming oil or contaminated prey • inhaling volatile oil compounds when surfacing to breathe • external exposure, by swimming in oil and having oil directly on the skin and body • maternal transfer of contaminants to embryos (NRDA, 2012). <p><u>Surface oil</u></p> <p>Unlike with pinnipeds oil would not be expected to adhere well to the surface of cetacean skin due to the lack of hairs and the frequent sloughing of skin cells (Engelhardt, 1983) (Helm, et al., 2015). In addition, oil should not readily penetrate cetacean skin due to tight intercellular bridges and thick epidermis (O’Hara & O’Shea, 2001). Nevertheless, cetaceans can be exposed to oil through direct contact with the eyes, mouth (ingestion), and airways (inhalation), potentially leading to inflammation and lung congestion (Geraci & St. Aubin, 1988).</p> <p>Inhalation of toxic compounds associated with fresh oil was of greater concern than absorption through the skin and ingestion (Helm, et al., 2015). The inhalation of oil droplets, vapours and fumes is a distinct possibility if whales or dolphins surface in slicks to breathe. Exposure to hydrocarbons in this way could damage mucous membranes, damage airways or even cause death. Cetaceans may incidentally draw seawater and floating oil, into their lungs by breathing in splashed droplets or liquid that has collected near the blowhole just prior to inhalation. Aspiration of liquid oil can cause physical injuries to the respiratory tract by irritating tissues/membranes and can also lead to</p>	<p>Several threatened, migratory and/or listed cetacean species may traverse the spill plume.</p> <p>The foraging BIAs for the PBW (see CMPBW) and the migration BIA for the SRW may be exposed to surface and in-water concentrations above the moderate exposure threshold. The foraging BIA for the Humpback whale and breeding BIA for the Indo-Pacific bottlenose dolphin (which extends northwards into New South Wales from the Victorian border) may also overlap the zones of moderate surface and in water (dissolved) hydrocarbon.</p> <p>If present, these species (and other cetaceans) may be exposed to oil in the manner described in this table.</p> <p>It is plausible that individual whales could encounter surface oil above the moderate exposure threshold (or high exposure threshold in the immediate vicinity of the release location), but the release would need to coincide with pod migration or foraging for a greater number of individuals to be present in the plume. Sightings of blue whales in the Gippsland Basin are reasonably rare (Bannister, Kemper, & Warneke, 1996) and acoustic detecting indicates that the PBW are predominantly located to the east, west and south of the OA. It is difficult to predict with certainty if a spill would lead to</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment																				
	<p>absorption of toxicants into the blood, as in inhalation exposure (Takeshita R. , et al., 2017). Exposure to oil concentrations of 10 g/m² could result in mortality to marine mammals (French-McCay D. , 2016).</p> <p>Evidence suggests that many cetacean species are unlikely to detect and avoid spilled oil (Matkin, Saulitis, Ellis, Olesiuk, & Rice, 2008). There are numerous examples where cetaceans have appeared to incidentally come into contact with oil and/or not demonstrated any obvious avoidance behaviour. Following the Exxon Valdez oil spill, (Matkin, Saulitis, Ellis, Olesiuk, & Rice, 2008) reported killer whales in slicks of oil as early as 24 hours after the spill and evidence (Aichinger Dias, et al., 2017) showed that following the DWH oil spill cetaceans in the GoM came into direct contact with both oil and sheen by swimming through them.</p> <p>Although in the GoM it was observed that cetaceans were able to detect the thick and dark-coloured patches of oil, detection of the lighter substances may have been more difficult. Photographs of dolphins with oil on their bodies showed that oil can adhere to and persist on cetacean skin, and contrary to suggestions from previous studies, direct contact with oil and resultant exposure to toxic compounds is of concern (Aichinger Dias, et al., 2017).</p> <p><u>In water (dissolved and entrained) oil</u></p> <p>The physical impacts from ingested hydrocarbon with subsequent lethal or sub-lethal impacts are applicable to both dissolved and entrained oil. However, the susceptibility of cetaceans varies with feeding habits. Baleen whales (such as blue, southern right and humpback) are not particularly susceptible to ingestion of oil in the water column as they feed by skimming the surface. Oil may stick to the baleen whale while they ‘filter feed’ near slicks. Toothed whales and dolphins may be susceptible to ingestion of dissolved and entrained oil as they gulp feed at depth. As highly mobile species, in general it is very unlikely that these animals will be constantly exposed to concentrations of hydrocarbons in the water column for continuous durations (e.g. >96 hours) that would lead to chronic effects. Note also, many marine mammals appear to have the necessary liver enzymes to metabolise hydrocarbons and excrete them as polar derivatives (Ball & Truskewycz, 2013).</p>	<p>levels of mortality or reproductive depression that would manifest in terms of a population-level response.</p> <p>The highly mobile and transitory nature of cetacean species in Bass Strait means that exposure to moderate to high levels of surface oil (in the vicinity of the release location) or moderate levels of in-water hydrocarbon is not anticipated to result in long term population viability effects. Nevertheless, taking into account that the populations of some whale species remain small relative to pre-whaling times and are thought to have a multi-decadal recovery time, mortality of even a small number of adults and or calves as result of oiling could inhibit or limit species recovery, the resultant impact is therefore assessed as Consequence Level II.</p> <table border="1"> <thead> <tr> <th colspan="2">Effect dimensions</th> <th colspan="2">Sensitivity dimensions</th> </tr> </thead> <tbody> <tr> <td>Duration</td> <td>H</td> <td>Irreplaceability</td> <td>H</td> </tr> <tr> <td>Size/Scale</td> <td>M</td> <td>Vulnerability</td> <td>H</td> </tr> <tr> <td>Intensity</td> <td>M</td> <td>Influence</td> <td>H</td> </tr> <tr> <td colspan="2">M-H</td> <td colspan="2">H</td> </tr> </tbody> </table>	Effect dimensions		Sensitivity dimensions		Duration	H	Irreplaceability	H	Size/Scale	M	Vulnerability	H	Intensity	M	Influence	H	M-H		H	
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	<p>Ingestion of oil may however result in acute nausea and vomiting and aspiration of oily vomitus into the lungs. Research conducted in the GoM linked aspiration pneumonia, lung abscesses, and pulmonary infections in dolphins to exposure to DWH oil (Takeshita R. , et al., 2017).</p> <p>Some whales, particularly those with coastal migration and reproduction, display strong site fidelity to specific resting, breeding and feeding habitats, as well as to their migratory paths and this may override any tendency for cetaceans to avoid the noxious presence of hydrocarbons. The SRW exhibits varying degrees of site fidelity, with the majority of females and calves returning to the same birthing location, while some also travel long distances between breeding grounds within a season (CMPSRW). If spilled oil reaches these biologically important habitats, the pollution may disrupt natural behaviours, displace animals, reduce foraging or reproductive success rates and increase mortality. It was concluded that the range of adverse health effects and increased mortality/reproductive failure observed in cetacean populations throughout the GoM since the DWH oil spill are consistent with the range of exposure scenarios (Takeshita R. , et al., 2017).</p> <p>If sufficiently high numbers of animals are impacted, the greater population may experience reduced recovery and survival rates. The restitution time for cetaceans affected at a population level is assumed to be long term, i.e. 40 years, based on consensus on recovery times for marine mammals following the DWH incident (Bock, et al., 2018).</p>	
<p>Coastal habitats and communities – Sandy shoreline, rocky shoreline, mangroves and saltmarsh</p>	<p><u>Sandy beaches</u></p> <p>Sandy beaches provide potential foraging and breeding habitat for numerous bird, marine turtle and pinniped species. These activities primarily occur above the high tide line, with exception of haul outs. Note, most of the oil on a sandy shore will be concentrated at, and below, the high tide mark. Sandy beaches are also inhabited by a diverse assemblage (although not always abundant) of infauna (including nematodes, copepods and polychaetes); and macroinvertebrates (e.g. crustaceans). Because the sand retains oil, such animals may be killed if oil penetrates into the sediments. Long-</p>	<p>There are different types of shorelines found along the Gippsland and southern New South Wales coast and offshore islands (including Tasmanian islands), however this coastline is dominated by wide sandy beaches with intermittent rocky shores, and salt marshes and isolated mangroves within tidal estuaries, coastal lakes and bays.</p> <p>The type of shoreline will influence the volume of hydrocarbon that could be stranded ashore and its thickness before the shoreline saturation point occurs (ITOPF, 2014). For instance, a sandy beach may allow hydrocarbon to</p>

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	<p>term depletion of sediment fauna could have an adverse effect on birds or fish that use tidal flats as feeding grounds (IPIECA, 1999).</p> <p>Depth of penetration in sandy sediment is influenced by:</p> <ul style="list-style-type: none"> • Particle size – Penetration is not generally as great on mud as on coarser sediments. • Oil viscosity – Viscous oils and mousse (water-in-oil emulsion) tend to penetrate less deeply than low-viscosity oils such as light crudes or diesel oil. • Drainage – If sediments are poorly drained (as is often the case with tidal flats remote from creeks or channels), the water content may prevent the oil from penetrating into the sediment. In contrast, oil may reach depths greater than one metre in coarse well-drained sediments. • Animal burrows and root pores – Penetration into fine sediments is increased if there are burrows of animals such as worms, or pores left where plant roots have decayed. <p>A 100 g/m² threshold (considered a 'stain' or 'film', and equivalent to 0.1 mm thickness) is assumed as the lethal threshold for invertebrates on hard substrates and sediments (mud, silt, sand, gravel) in intertidal habitats. A threshold of 100 g/m² oil thickness would be enough to coat an animal and likely impact its survival and reproductive capacity (French-McCay D. P., 2009). Based on this, areas of heavy oiling would likely result in acute toxicity, and death, of many invertebrate communities, especially where oil penetrates into sediments through animal burrows (IPIECA, 1999). However, these communities would be likely to rapidly recover (recruitment from unaffected individuals and recruitment from nearby areas) as oil is removed from the environment.</p> <p>Following the Sea Empress spill (in west Wales, 1996) many amphipods (sandhoppers), cockles and razor shells were killed. There were mass strandings on many beaches of both intertidal species (such as cockles) and shallow sub-tidal species. Similar mass strandings occurred after the Amoco Cadiz spill (in Brittany, France, 1978) (IPIECA, 1999). Following the Sea Empress spill, populations of mud snails recovered within a few months but some amphipod populations had not returned to normal after one year. Opportunists such as some species of worm may actually show a dramatic short-term increase following an oil spill (IPIECA, 1999). In March 2014, small volumes of</p>	<p>percolate through the sand, and weathered oil may be buried, thus increasing its ability to hold more hydrocarbon ashore over tidal cycles and various wave actions in comparison to a rocky shore; hence hydrocarbon can increase in thickness onshore over time.</p> <p>The maximum length of shoreline exposed to oil at the moderate threshold is 558 km and at the high threshold 262 km.</p> <p>The high shoreline loadings would likely result in acute toxicity, and death, of many invertebrate communities, especially for the light crude release scenarios which will easily penetrate into sandy sediments. However, tidal action is expected to lead to rapid weathering of these hydrocarbons in the intertidal area and the populations of these communities would be likely to rapidly recover.</p> <p>More persistent waxy residues are less likely to penetrate into intertidal sediments but may be forced to depth by wave action on high energy beaches. Oil residue retained deep beneath sediment may be protected from re-mobilisation and exposure to further weathering reduced (Lee, Shim, Lee, & Kim, 2011). Rocky shores along the Gippsland and southern New South Wales coastline are generally exposed and any oil deposited would be rapidly removed by wave action. Impacts on intertidal communities are typically short term unless acute exposure to fresh product causes high mortality.</p> <p>In Victoria, mangroves are known to occur within sheltered bays or inlets such as Western Port, Lakes Entrance and Corner Inlet. Based on the modelling results, mangrove habitats at most risk, are those near Lakes Entrance however many of the strands are in river estuaries or associated wetlands with only limited or intermittent access to the open</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>crude oil from an unidentified source (confirmed to not be offshore oil and gas production facilities) washed up along a 7 km section of sandy beach on the Victorian Gippsland coast as small (a few millimetres thick) granular balls (Gippsland Times, 2014).. No impacts were observed over the course of two months following the incident.</p> <p>As a result of the DWH spill, oil washed up on sandy beaches of the Alabama coastline. The natural movement of sand and water through the beach system continually transformed and re-distributed oil within the beach system, and 18 months after the event, mobile remnant oil remained in various states of weathering buried at different depths in the beaches (Hayworth, Clement, & Valentine, 2011). There is also evidence that submerged oil mats exist just offshore of the Alabama beaches (ranging in thickness from a few millimetres to several centimetres), which has resulted in the regular washing up of tar balls onto sandy beaches. These submerged oil mats may serve as long-term sources of remnant oil to the beach ecosystem (Hayworth, Clement, & Valentine, 2011). Long-term changes to the beach ecosystem as a result of stranded oil are unknown.</p> <p>Other results from beach sampling undertaken at Dauphin Island, Alabama, in May (pre-impact) and September 2011 (post-impact) found a large shift in the diversity and abundance of microbial species (e.g. nematodes, annelids, arthropods, polychaetes, protists, fungi, algae and bacteria). Post-spill, sampling indicated that species composition was almost exclusively dominated by a few species of fungi. DNA analyses revealed that the 'before' and 'after' communities at the same sites weren't closely related to each other (Bik, Halanych, Sharma, & Thomas, 2012). Similar studies found that oil deposited on the beaches caused a shift in the community structure toward a hydrocarbonoclastic consortium (petroleum hydrocarbon degrading microorganisms) (Lamendella, et al., 2014).</p> <p><u>Rocky shorelines</u></p> <p>Rocky shores encompass a wide variety of habitats. Exposure to the sun and wave energy are key factors in determining the types of plants and animals that inhabit the rocky shores. The persistence of oil is largely governed by the same forces (IOGP, 2016). Rock surfaces exposed to strong wave action are typically dominated by</p>	<p>ocean. Further north, the New South Wales coast mangroves may be exposed under certain conditions to shoreline accumulations of oil above moderate thresholds.</p> <p>For New South Wales, oil arriving would be well weathered with little lasting impact on salt marshes. Isolated marshes in Victoria near Wilsons Promontory potentially could be exposed to above moderate threshold shoreline accumulation. Salt marsh are important benthic primary producers and provide habitat for other species, thus the loss of salt marshes could have long-lasting indirect effects on other organisms. The effect of a LOWC on individual shorelines will depend on the type of shoreline, aspect and whether they are high or low energy shores. Shoreline recovery studies link restitution times to oil type, climate, shoreline type and results range depending on the receptors monitored and level of clean up.</p> <p>The oil from the 2010 DWH spill in the GoM was documented by shoreline assessment teams as stranding on 1773 km of shoreline (Michel, et al., 2013). Shoreline clean-up activities were authorized on 660 km, or 73.3 % of oiled beaches and up to 71 km, or 8.9 % of oiled marshes and associated habitats. One year after the spill began, oil remained on 847 km; two years later, oil remained on 687 km, though at much lesser degrees of oiling. For example, shorelines characterised as heavily oiled went from a maximum of 360 km, to 22.4 km one year later, and to 6.4 km two years later (Michel, et al., 2013)</p> <p>Hence recovery can range widely from around 2 years (Sea Empress, 1996, North Sea crude) to more than 20 years for soft sediment shorelines deeply contaminated during the 1991 Gulf War spills (IOGP, 2016).</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment																				
	<p>barnacles and limpets that are firmly attached and if oil strands on those surfaces it may result in mortality of the affected animals but is unlikely to persist. Sheltered rocky shores in estuaries or inlets are typically dominated by macroalgae (seaweed) with various invertebrates living on or under the algae. Oil deposited in these habitats may not be washed off so quickly and recovery from impacts may take longer.</p> <p><u>Mangroves and salt marshes</u></p> <p>Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (DoEE, 2016). The effects of surface hydrocarbons on mangroves include damage by smothering of lenticels (mangrove breathing pores) on pneumatophores or aerial prop roots, or the lower trunk; or by the loss of leaves (defoliation) due to chemical burning. It is also known that mangroves take up hydrocarbons from contact with leaves, roots or sediments, and it is suspected that this uptake causes defoliation through leaf damage and tree death (Wardrop, Butler, & Johnson, 1987).</p> <p>In-water entrained and dissolved hydrocarbons may affect mangrove communities directly through root uptake of toxic contaminants or indirectly due to effects on benthic infauna leading to reduced rates of bioturbation and subsequent oxygen stress on the plants root systems. Observed thresholds for effects are likely to vary depending on the health of the system, the hydrocarbon spilled and the environmental conditions; however, observations (Lin & Mendelssohn, 1996) demonstrated that more than 1 kg/m² of oil during the growing season would be required to affect salt marsh or mangrove plants significantly.</p> <p>“Subtropical and temperate coastal salt marsh” (otherwise referred to as coastal salt marsh) is listed as a TEC. This TEC is usually associated with sandy/muddy shores of estuaries and embayments along low wave energy coastlines. The physical environment for the TEC is coastal areas under regular or intermittent tidal influence, with salt marsh being the key vegetation type – that being salt-tolerant grasses, herbs, sedges, rushes and shrubs generally less than 50 cm high (DSEWPAC, 2013). Salt marshes occur in sheltered conditions, commonly in the strandline zone, and the vegetation offers a large surface area for oil absorption and trapping. Additionally, many salt marsh grasses,</p>	<p>Of the shorelines of the states potentially impacted, the consequence to shorelines in Victoria is predicted to be greatest (contacted first, highest loadings and freshest oil). The resultant impact is assessed conservatively as a Consequence Level II.</p> <table border="1"> <thead> <tr> <th colspan="2">Effect dimensions</th> <th colspan="2">Sensitivity dimensions</th> </tr> </thead> <tbody> <tr> <td>Duration</td> <td>H</td> <td>Irreplaceability</td> <td>M</td> </tr> <tr> <td>Size/Scale</td> <td>H</td> <td>Vulnerability</td> <td>M</td> </tr> <tr> <td>Intensity</td> <td>M</td> <td>Influence</td> <td>M</td> </tr> <tr> <td colspan="2">M-H</td> <td colspan="2">M</td> </tr> </tbody> </table>	Effect dimensions		Sensitivity dimensions		Duration	H	Irreplaceability	M	Size/Scale	H	Vulnerability	M	Intensity	M	Influence	M	M-H		M	
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	<p>which can be dominant over large areas, have corrugated leaf surfaces which increase their holding capacity.</p> <p>Evidence from case histories and experiments shows that the damage resulting from oiling is very variable – as are recovery times. Lighter, more penetrating oils are more likely to cause acute toxic damage than heavy or weathered oils. 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. Where thick deposits of viscous oil or mousse accumulate on the marsh surface, vegetation is likely to be killed by smothering and recovery delayed because persistent deposits inhibit recolonization.</p>	
Wetlands	<p>Most wetlands of international importance i.e. Ramsar wetlands have minimal risk of receiving oil following a LOWC because they have no, or very narrow and/or seasonal, connections to the sea. If surface oil was to enter a Ramsar site, the level of effect would be dependent on the type of receptors exposed to oil and the proportion of the site exposed to oil as well as the nature of the oil (fresh versus weathered).</p> <p>Sensitive receptors found in Ramsar sites connected to the sea could include mangroves, salt marshes, fish, shorebirds and seabirds. The consequences of oil exposure to these specific receptors have been described individually in the sections above.</p>	<p>Under certain metocean conditions floating surface oil and in-water (dissolved) hydrocarbons at or above the moderate threshold are predicted to reach the Gippsland Lakes Ramsar site. Oil is predicted to accumulate at high – moderate thresholds on the shoreline at Lakes Entrance and along the Ninety Mile Beach. However, the single, narrow entrance and presence of coastal dunes means the wetland itself is highly unlikely to be affected in any manner.</p> <p>Floating surface oil and in-water (dissolved) hydrocarbons are not predicted to reach the Corner Inlet Ramsar site at or above the moderate threshold. Under certain conditions shoreline oil is predicted to accumulate at high – moderate thresholds along the shoreline of Corner Inlet. While the tidal mudflats are in part protected by narrow entrance channels and the coastal dune system. It is noted that there was potential for “devastating effects” of oil spills on Corner Inlet (Parks Victoria, 2005).</p> <p>The consequence is assessed as Consequence Level II.</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment			
		Effect dimensions		Sensitivity dimensions	
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		Size/Scale	M	Vulnerability	H
		Intensity	M	Influence	H
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National parks and reserves	<p>Potential impacts to sensitive receptors related to the shorelines of the terrestrial parks, such as coastal habitats and birds, and the waters of the marine parks, such as benthic habitats, fish, cetaceans and pinnipeds, are discussed in the appropriate sections above.</p> <p>Impacts on tourism and recreation from degraded aesthetic values and water quality or restricted access to the coast and recreational locales within the Parks due to clean up efforts are discussed below.</p>	<p>Modelling predicts contact at the moderate in-water (dissolved) threshold for six marine parks, reserves and sanctuaries (Wilson's Promontory, Ninety Mile Beach, Point Hicks, Cape Howe and Beware Reef in Victoria and Batemans in New South Wales).</p> <p>Oil is predicted to accumulate above the moderate-high exposure threshold on the Gippsland and southern New South Wales coastline adjacent to several terrestrial parks and reserves including Wilson's Promontory, Corner Inlet, Nooramunga, Gippsland Lakes, Cape Conran and Croajingolong in Victoria and Nadgee, Ben Boyd, Bournda, Mimosa Rocks, Montague Island, Eurobodalla and Booderee in New South Wales). Oil at or above the moderate threshold is predicted to accumulate on the shoreline of the Kent Group National Park, Hogan Island Group and Moncouer and Curtis Islands (Tasmania).</p> <p>The consequence is assessed as Consequence Level II taking into consideration the length of shoreline potentially impacted and the extent of oil accumulation predicted.</p>			
AMPs	AMPs vary in their conservation objectives and specific values, but all are designed to conserve fauna, habitats and water quality over the long term. AMPs support	Surface and in-water (dissolved) oil entering these AMPs will degrade water quality until the oil is broken down and or			

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>populations of threatened seabird, marine mammal and fish species. A temporary deterioration of water quality could have negative effects on organisms, such as plankton, seabirds, marine mammals and fisheries resources which in turn affect the values of that Park. These impacts are discussed individually within other sections.</p>	<p>currents shift the weathering oil outside the boundaries of the AMPs. Thus, water quality effects are predicted to persist only over the short to medium term in the AMPs.</p> <p>Modelling indicated that no AMPs would be exposed to moderate thresholds of in water (dissolved) oil. Under certain metocean conditions floating oil was predicted to encroach upon the northwest corner of East Gippsland AMP at the outer edge of the zone of moderate exposure.</p> <p>The overall consequence is assessed as Consequence Level III.</p>
<p>KEFs</p>	<p>KEFs are underwater features, and hence are not at direct risk from floating surface oil or shoreline accumulated oil. Deepwater geological features, such as the Big Horseshoe Canyon and Canyons on the Eastern Continental Slope will not be impacted directly by oil.</p> <p>However, biological values associated with KEFs such as the Upwelling East of Eden and Shelf Rocky Reefs may be at risk from oil.</p> <p>Potential impacts to sensitive receptors related to the KEF Upwelling East of Eden such as plankton and cetaceans, or to the KEF Shelf Rocky Reefs such as benthic communities and fish, are discussed in the appropriate sections above.</p>	<p>While a spill would not affect the KEF Upwelling East of Eden itself, if the spill occurs at the time of an upwelling event, it may result in krill being exposed to in-water phase hydrocarbons. PBWs feeding at this time may suffer from reduced availability of prey however these impacts are expected to be localised and temporary.</p> <p>The consequence is assessed as Consequence Level III.</p>
<p>Cultural – Indigenous and historic</p>	<p>Visible sheen or oil stranded on the shoreline has the potential to reduce the visual or cultural (including activities such as camping, rituals and ceremonies) amenity of cultural heritage sites such as historic (e.g. shipwreck) or indigenous protected areas.</p> <p>Impacts from oil exposure are unlikely for submerged shipwrecks.</p>	<p>Oil sheen is predicted to encroach upon nearshore waters in the vicinity of the Gunaikurnai Native Title Determination Area and a number of historic shipwrecks. Parts of the Gippsland coast over which the Gunaikurnai people hold native title are predicted to be exposed to moderate – high shoreline oil loadings which may lead to reduced amenity or temporary exclusions during clean-up. Impacts from degraded aesthetics of sites along the coast may take time to recover but loss of access to sites during response or for health reasons are temporary and relatively short term. The</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
		<p>consequence is considered Consequence Level III based on public impact consequence considerations (media coverage, the scope of the disruption (personal, commerce, transportation or socioeconomic) and the size of the population affected) as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018). Refer to Figure 5-1.</p>
<p>Commercial fisheries</p>	<p>Commercial fishing has the potential to be impacted through exclusion zones associated with the spill, the spill response and subsequent reduction in fishing effort. Exclusion zones may impede access to commercial fishing areas, for a short period of time, and nets and lines may become oiled. The impacts to commercial fishing from a public perception perspective however, may be more significant and longer term than the spill itself.</p> <p>Fishing areas may be closed for fishing for shorter or longer periods because of the risks of the catch being tainted by oil. Concentrations of petroleum contaminants in fish and crustacean and mollusc tissues could pose a significant potential for adverse human health effects, and until these products from nearshore fisheries have been cleared by the health authorities, they could be restricted for sale and human consumption. Indirectly, the fisheries sector will suffer losses if consumers are either stopped from using or unwilling to buy fish and shellfish from the region affected by the spill.</p> <p>Impacts to fish stocks have the potential for reduction in profits for commercial fisheries, and exclusion zones exclude fishing effort. Detectable tainting of fish flesh occurs after a 24-hour exposure at crude concentrations of 0.1 ppm, marine fuel oil concentrations of 0.33 ppm and diesel concentrations of 0.25 ppm (Davis, Moffat, & Shepherd, 2002).</p> <p>The Montara spill (as the most recent [2009] example of a large hydrocarbon spill in Australian waters) occurred over an area fished by the Northern Demersal Scalefish Managed Fishery (with 11 licences held by 7 operators), with goldband snapper, red emperor, saddletail snapper and yellow spotted rockcod being the key species fished (PTTEP, 2013). As a precautionary measure, the Western Australia Department of Fisheries advised the commercial fishing fleet to avoid fishing in oil-affected waters.</p>	<p>Several commercial fisheries may operate within the area potentially exposed in the event of a LOWC. Floating oil is predicted to extend 10's of km's outside the subsea facility PSZ (from which fishing vessels are already excluded) making it likely that in these situations an exclusion zone (or fisheries closure) would be established.</p> <p>There are currently no commercially viable scallop beds fished in the area potentially exposed to dissolved hydrocarbons (Patterson, et al., 2021) (Koopman, Knuckey, Harris, & Hudson, 2018). Limited data is publicly available on the location and extent of abalone fishing within Victorian waters however a number of licences are active and it is known that harvesting occurs off Cape Conran and at Mallacoota. Of the State and Commonwealth administered fisheries which overlap the EMBA (see Appendix A) the fisheries most active in the area potentially exposed to hydrocarbons, and therefore potentially most at risk of socioeconomic impact from reduced market confidence, are the Southern and Eastern Scalefish and Shark Fishery (31 trawl vessels, 19 Danish-seine vessels and 21 scalefish hook vessels active in total) and the Wrasse Fishery (22 licences in total) (Patterson, et al., 2021) (Koopman, Knuckey, Harris, & Hudson, 2018).</p> <p>A temporary fisheries closure and the flow on losses from the lack of income derived from these fisheries based on reduced</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
	<p>Testing of fish caught in areas of visible oil slick (November 2009) found that there were no detectable petroleum hydrocarbons in fish muscle samples, suggesting fish were safe for human consumption. In the short-term, fish had metabolized petroleum hydrocarbons. Limited ill effects were detected in a small number of individual fish only (PTTEP, 2013). No consistent effects of exposure on fish health could be detected within two weeks following the end of the well release. Follow up sampling in areas affected by the spill during 2010 and 2011 (PTTEP, 2013) found negligible ongoing environmental impacts from the spill.</p> <p>Since testing began in the month after the DWH blowout in the GoM (2010), levels of oil contamination residue in seafood consistently tested 100 to 1,000 times lower than safety thresholds established by the USA FDA, and every sample tested was found to be far below the USA FDA’s safety threshold for dispersant compounds (BP, 2015. The USA FDA testing of oysters found oil contamination residues to be 10 to 100 times below safety thresholds (BP, 2015. Sampling data shows that post-spill fish populations in the GoM since 2011 were generally consistent with pre-spill ranges and for many shellfish species, commercial landings in the GoM in 2011 were comparable to pre-spill levels. In 2012, shrimp (prawn) and blue crab landings were within 2.0 % of 2007-09 landings. Recreational fishing harvests in 2011, 2012 and 2013 exceeded landings from 2007-09 (BP, 2015).</p>	<p>market confidence and the potential for extended media coverage (potentially greater than 3 months) has the possibility of exceeding medium community disruption (> 100 – 1000 people) such as reduced employment (in fisheries service industries and the seafood supply chain).</p> <p>The potential economic impacts to commercial fisheries from LOWC are considered to be Public Impact Consequence Level I based on public impact consequence considerations (media coverage, the scope of the disruption (personal, commerce, transportation or socioeconomic) and the size of the population affected) as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018). Refer to Figure 5-1.</p>
<p>Tourism and recreation</p>	<p>Refer also to sections on fish, cetaceans, benthic and coastal habitats and national parks and reserves above.</p>	<p>Tourism and recreation is also linked to the presence of marine fauna (e.g. whales), particular habitats and locations for swimming or recreational fishing.</p> <p>The modelling predicts visible oil extending into nearshore Victorian waters (including waters of Ninety Mile Beach, Point Hicks and Cape Howe Marine National Parks and Beware Reef Marine Sanctuary). Oil is predicted to contact hundreds of km’s of shoreline at the moderate – high exposure threshold. The shoreline is dominated by sandy beaches popular for a range of recreational activities. A number of national parks and reserves including the very</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
		<p>popular Wilsons Promontory and (Gippsland) Lakes National Parks are situated along this potentially exposed coastline.</p> <p>Short to medium-term impacts to nature-based tourism and other human uses of beaches (and nearshore waters) may occur as a result of temporary beach closures to enable clean-up, protect human health or due to perceptions of a polluted environment that is not desirable to visit.</p> <p>With respect to human health, post-Macondo oil spill (April 2010) studies in December found of 17,000 water samples, none exceeded US Environmental Protection Agency benchmarks for protection of human health (OSAT, 2011) and a year later residual oil in nearshore and sandy shoreline areas was highly weathered and concentrations of constituents of concern were below levels of concern for human health (OSAT, 2011).</p> <p>Alaska’s tourism economy took approximately two years to recover from the Exxon Valdez (BOEM, 2017. The Eastern Research Group (2014) reported that while the DWH spill had had a significant impact on several areas of tourism in the short term and had wide-ranging impacts across the GoM, the tourism economy has rebounded to pre-spill levels within four years.</p> <p>The extent of potential impacts to tourism and recreation depends on when the spill occurs, size and where it comes ashore. Considering the range of activities and locations, the potential for reduced amenity of areas used by coastal tourists and recreational visitors, temporary health implications and possible closures, the consequence is considered Consequence Level I, based on public impact consequence considerations (media coverage, the scope of the disruption (personal, commerce, transportation or socio-</p>

Receptor	Impact of hydrocarbon exposure	Exposure risk assessment
		economic) and the size of the population affected) as per the <i>Risk Matrix Application Guide</i> (ExxonMobil, 2018). Refer to Figure 5-1.

7.7.3 Residual risk ranking

Table 7-40 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
II (environmental)/ I (public impact)	D	3 (environmental)/ 2 (public impact)

7.7.4 Controls

- **CM32:** NOPSEMA Accepted Well Operations Management Plan
- **CM34:** NOPSEMA accepted Safety Case
- **CMP16:** P&A design
- **CMP17:** Esso approved plug and abandonment procedures
- **CMP18:** Evaluation of reservoir properties
- **CM18:** Preventative Maintenance System
- **CMP19:** Pressure Control Equipment testing
- **CMP20:** JUR move procedure
- **CM12:** Oil Pollution Emergency Plan
- **CM35:** Operational and Scientific Monitoring Plan (OSMP)
- **CMP22:** Source Control Emergency Response Arrangements included in the Australia Wells Tier II/III Emergency Response Plan
- **CMP23:** Availability of suitable MODU to drill relief well
- **CMP24:** Availability of resources to meet relief well timeframe commitments
- **CM51:** Utilisation of idle fishing vessels
- **CM52:** Communication with fisheries

Refer to Appendix H for corresponding descriptions of EPOs and EPSs, and measurement criteria.

A critical part of the response to a LOWC will be to secure a suitable rig capable of drilling a relief well. Depending on the type of MODU and location, the rig may be self-propelled or require tow to the relief well location (towed MODU averages 4 knots). The selection of a suitable MODU and support vessels would focus on the units currently operating in Australia under an accepted Safety Case that are suitable to drill the relief well (considering water depth and other well specifications). If required, a vessel Safety Case would be prepared during the time it takes to mobilise the rig to the incident location (approximately 51 days). Table 7-41 lists the breakdown of time required to mobilise a MODU for the purposes of relief well drilling. Wellhead and casing requirements will be identified during the planning phase concurrently with MODU mobilisation.

Table 7-41 Response time breakdown (wet tow scenario)

Operation	Duration (days)	Cumulative (days)
Notifications; Mobilise specialist personnel; Initiate SCERP; Source MODU; Contract; Source anchor handling tow and support.	7	7
MODU suspend well, demobilise, transit to tow location	14	21
Tow to incident location (4 knots)	30	51
Load materials	2	53
Moor and drill relief well	35	88
Weather allowance	5	93
Kill well	5	98

7.7.5 Demonstration of As Low as Reasonably Practicable

Table 7-42 Decision Context and justification

Decision Context A
<p>The permanent P&A of offshore wells is a well-established practice and the environmental and public impact risks (Risk Category 3 (medium) and Risk Category 2 (medium) respectively) associated with a LOWC are well understood and effectively managed by existing controls.</p> <p>The environmental and public consequences of a LOWC have been assessed as moderate – high, therefore ALARP Decision Context B has been applied. The utilisation of idle fishing vessels (where practicable and safe to do so) and ensuring ongoing communication with the fishing industry bodies will assist in mitigating socio-economic impacts to commercial fisheries and the seafood supply chain.</p> <p>Consequently, Esso believes ALARP Decision Context B should apply.</p>

Table 7-43 Good practice controls

Good practice	Adopted?	Control	Rationale
Well operations planning to prevent LOWC	Yes	CM32: NOPSEMA Accepted Well Operations Management Plan	<p>Under Part 5 of the <i>Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011</i>, NOPSEMA is required to accept a WOMP to enable well activities to be undertaken.</p> <p>The key elements of the WOMP, which function to reduce the likelihood of LOWC include the specification of well abandonment design and barriers to be used to prevent a loss of well integrity.</p> <p>Esso’s NOPSEMA-accepted WOMP will describe the minimum requirements for P&A barriers during operations.</p>
Implementation of a safety management system that controls risks arising from major incidents and achieves safe operation of the facility	Yes	CM34: NOPSEMA accepted Safety Case	<p>Under the OPGGS (Safety) Regulations, NOPSEMA requires that the facility (i.e. the JUR) has an accepted Safety Case in place before commencing the activity. The <i>Valaris J-107</i> has a Safety Case in place (Valaris, 2021).</p> <p>The key elements of the Safety Case that function to reduce the likelihood of LOWC include:</p> <ul style="list-style-type: none"> • Training (of JUR team) - Section 2.2.4.4 and Attachment A, Section 2.8. • Qualifications (of JUR team) - Section 2.2.4 (competence). • Maintenance (of PCE and JUR equipment) - Section 2.3.19 (maintenance management). • Justification for Continued Operation - Section 1.2.12. • Management of Change – Section 2.3.2. • Selection of Health Safety and Environment (HSE) Critical equipment/systems – Section 3.1.5.

Good practice	Adopted?	Control	Rationale
			<ul style="list-style-type: none"> • Blow out preventer system – Section 3.3.3. • Well Testing – Section 3.8. • Power Generation and Distribution – Section 3.4.1. • Emergency Response – Part 5. • Performance Monitoring – Part 6.
Oil spill response planning	Yes	CM12: Oil Pollution Emergency Plan	Under the OPGGS (Environment) Regulations, NOPSEMA requires that the petroleum activity has an accepted OPEP in place before commencing the activity. In the event of a LOWC, the OPEP will be implemented.
	Yes	CMP22: Source Control Emergency Response Arrangements included in the Australia Wells Tier II/III Emergency Response Plan	Source control tools available include: <ul style="list-style-type: none"> • drilling a relief well (if required). Relief well and dynamic kill analysis studies: <ul style="list-style-type: none"> • dynamic kill analysis to determine kill fluid density, kill flow rate and required volume. The WOMP shall summarise the relief well and dynamic kill analysis studies. Contracts with third-party provider for well construction material, as well as logistics contracts are in place for this campaign.
	Yes	CMP23: Availability of suitable MODU to drill relief well	The status and location of suitable rig to drill a relief well are identified 30 days prior to P&A works commencing on first well and subsequently each month throughout the P&A campaign. The monitoring process used to identify availability of suitable rigs and support vessels is done through a system that allows Esso to determine how long the rigs are likely to be available for and therefore provides an advanced outlook of when availability might change. In the unlikely event that there is no suitable rig available to allow a relief well to be drilled in the committed 98-day timeframe, the well activities will be made safe and any further activities will be suspended until such time as the activity can comply with this EP or a revised EP has been prepared, submitted and accepted.
	YES	ESSO IMT Capability and training	Trained personnel are available to fulfil Incident Commander, Operations Section Chief, Planning Section Chief, Logistics Section Chief, Safety Officer and Environmental Unit Lead roles with 1 hour of Esso IMT activation.

Good practice	Adopted?	Control	Rationale
			<p>Capability is demonstrated during test/drill and is documented in test/drill report.</p> <p>Training records.</p> <p>Personnel are required to participate in regular drills and exercises.</p> <p>Esso maintains a pool of trained personnel to fulfill all roles in the event of an extended response.</p>
Oil spill monitoring planning	Yes	CM35: Operational and Scientific Monitoring Plan (OSMP)	<p>Esso’s OSMP details the arrangements and capability in place for:</p> <ul style="list-style-type: none"> operational monitoring of a hydrocarbon spill to inform response activities scientific monitoring of environmental impacts of the spill and response activities. <p>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.</p>

Table 7-44 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted?
Third level of well barriers	Increased level of protection from uncontrolled flow from a well beyond the ‘two barrier’ requirement.	The two-barrier philosophy is considered industry best practice, specifically designed to reduce the risk to ALARP.	No
Standby MODU available locally to reduce mobilisation time	Having a MODU on standby may allow the relief well to be drilled 34 days earlier than would otherwise be the case. There is an extremely low probability of occurrence of a LOWC.	Having a standby MODU would effectively double the cost of the P&A program, thus potentially jeopardising its viability. The mobilisation/demobilisation cost is estimated at AUD\$22M. The standby costs for a MODU spread for the duration of the program are estimated at AUD\$300M. Given the high potential costs to the program, implementing this control measure is considered disproportionate, given that the likelihood of a LOWC is extremely low.	No
Relief well materials staged locally	Response time for relief well drilling is dependent on the availability of necessary well construction	Wellhead and casing requirements will be identified during the planning phase concurrently with MODU mobilisation.	No

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted?
	<p>equipment (i.e. wellhead, casing).</p> <p>There is no meaningful reduction in time for relief well drilling as sufficient materials are available as spares or can be sourced within short timeframes.</p>	<p>Any additional equipment would be mobilised from existing ExxonMobil’s global inventory.</p> <p>A review of ExxonMobil’s global inventory will be conducted prior to beginning operations to confirm requirements for a relief well are available.</p>	
<p>Prepare detailed Relief Well Plan in advance of campaign</p>	<p>A preliminary plan forms part of the WOMP; further case-by-case details can be developed immediately after the event.</p> <p>Wild Well Control assessed the requirements and parameters for a relief well as a basis for the development of a relief well plan.</p> <p>Sufficient time would be available to prepare a detailed relief well plan when the specific blow-out parameters for a relief well can be determined, immediately following the incident, and while the relief rig is being mobilised.</p>	<p>Detailed Relief Well Plan needs to be developed on a case-by-case basis.</p> <p>Detailed Plan can be developed immediately after LOWC scenario is fully understood, and while relief well rig is being mobilised.</p> <p>The benefit from preparing a detailed relief well plan without knowing specifics of the LOWC is negligible.</p>	<p>No</p>
<p>Pre-drill relief well top hole to reduce the relief well drilling time</p>	<p>May reduce response time, possibly by up to approximately 20 days.</p>	<p>Based on the relief well design, the top-hole sections of the relief well would take ~20 days to drill.</p> <p>This would result in an additional cost to the well construction program. At a conservative MODU spread-rate of AUD\$800k per day, this control measure could result in a cost of AUD\$16M.</p> <p>The pre-drilling of a relief well top hole would result in further environmental impacts and risks.</p> <p>Given the high costs to the program, implementing this control measure is considered disproportionate to the level of environmental benefit gained, given that the likelihood of a LOWC is extremely low.</p>	<p>No</p>

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted?
Capping stack system	If possible - could reduce the uncontrolled blowout duration.	<p>The deployment of a vertical Capping Stack at the JUR P&A locations was assessed for all locations and established that it is not feasible for any wells in water depth less than 75 m (see Attachment 2), this excluded all sites except for East Pilchard-1 which is in 91 m water depth.</p> <p>For East Pilchard-1, the complexities and uncertainties associated with the logistics and implementation of a Capping Stack System, along with noting that a relief well would still be required to kill the well has meant that the primary response strategy will be a relief well.</p> <p>In addition, given the well activity is to be conducted with a JUR and a dry BOP, use of a capping stack has not been assessed as a viable option for East Pilchard.</p>	No

7.7.6 Demonstration of acceptability

Table 7-45 Demonstration of acceptability test

Factor	Demonstration criteria	Criteria met?	Rationale
Risk assessment process for unplanned events	The risk ranking is lower than Risk Category 1.	Yes	The risk ranking is Risk Category 4 (the lowest category) and therefore considered acceptable.
Principles of ESD	No potential to affect biological diversity and ecological integrity.	Yes	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.
	Activity does not have the potential to result in serious or irreversible environmental damage.	Yes	The activities were evaluated as having the potential to result in a Consequence Level IV thus are not considered as having the potential to result in serious or irreversible environmental damage.
Legislative and other requirements	Legislative and other requirements have been identified and met.	Yes	<p>The proposed activities align with the requirements of the OPGGS Act:</p> <ul style="list-style-type: none"> Schedule 3 (occupational health and safety) of the OPGGS Act and OPGGS (Safety) Regulations require the operator of each offshore facility to prepare a Safety Case for

Factor	Demonstration criteria	Criteria met?	Rationale
			submission to NOPSEMA. Activities at a facility must be conducted in accordance with a Safety Case that has been accepted by NOPSEMA. <ul style="list-style-type: none"> Part 5, <i>Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011</i> which require NOPSEMA to accept a WOMP to enable well activities to be undertaken.
Internal context	Consistent with Esso’s Environment Policy.	Yes	Proposed activities are consistent with Esso’s Environment Policy, in particular, to “comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist”
	Meets ExxonMobil Environmental Standards.	Yes	There is no specific Environmental Standard that addresses LOWC but the controls proposed meet the strategic objectives of the Upstream Environmental Standards.
	Meets ExxonMobil OIMS Objectives.	Yes	Proposed activities meet: <ul style="list-style-type: none"> OIMS System 6-5 objective to identify and assess environmental aspects; significant aspects are addressed and controlled consistent with policy and regulatory requirements OIMS System 8-1 objectives to clearly define and communicate OI requirements to contractors and to qualify, evaluate and select contractors based on their ability to perform work in a safe, secure and environmentally sound manner OIMS System 10-1 objective to anticipate community concerns and develop response plans, as appropriate OIMS System 10-2 objectives to document, resource and communicate emergency response plans, and conduct training, exercises and/or drills to determine the adequacy of the plans.
External context	Concerns of relevant persons have been considered/addressed through the consultation process.	Yes	No relevant person concerns have been raised concerning the risk of LOC resulting from a LOWC.

8 Implementation strategy

The OPGGS (Environment) Regulations 22(1) requires that an implementation strategy must be included in an EP. The implementation strategy must contain a description of the Environmental Management System for the activity (per OPGGS (Environment) Regulations 22(2)), including specific measures to be used to ensure that, for the duration of this EP, and until such time as the relevant petroleum titles are surrendered:

- the environmental impacts and risks of the activity continue to be identified and reduced to a level that is ALARP
- control measures detailed in the EP are effective in reducing the environmental impacts and risks of the activity to ALARP and an acceptable level
- EPOs and EPSs set out in the EP are being met.

The Environmental Management System for this EP is ExxonMobil's OIMS. Lloyd's Register Quality Assurance Inc. has assessed OIMS and concluded that it is consistent with the intent and meets the requirements of *ISO 14001 Environmental Management Systems*.

8.1 ExxonMobil's framework

As a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, Esso complies with the Exxon Mobil Corporation Standards of Business Conduct, which require the company to conduct business in a manner that is compatible with the environmental, social and economic needs of the communities in which it operates. These Standards also aim to protect the safety and health of employees, those involved in operations, and members of the public.

In addition to the Standards, Esso manages its operations in accordance with a structured and disciplined risk management framework known as OIMS. This System identifies, evaluates and manages risks across all ExxonMobil exploration, construction and production activities.

8.1.1 Standards of Business Conduct

The Standards of Business Conduct form the framework by which ExxonMobil and its subsidiaries operate around the globe and provide employees with the principles and an understanding of ExxonMobil standards.

The Standards of Business Conduct include the following foundation policies:

- Ethics Policy
- Conflicts of Interest Policy
- Corporate Assets Policy
- Directorships Policy
- Gifts and Entertainment Policy
- Anti-Corruption Policy
- Political Activities Policy
- International Operations Policy
- Antitrust Policy
- Health Policy
- Environment Policy
- Safety Policy
- Product Safety Policy
- Customer Relations and Product Quality Policy
- Alcohol and Drug Use Policy
- Equal Employment Opportunity Policy
- Equal Employment Opportunity Policy (modified for application in the United States)
- Harassment in the Workplace Policy
- Harassment in the Workplace Policy (modified for application in the United States).

The Standards of Business Conduct can be accessed via the following link: https://corporate.exxonmobil.com/-/media/Global/Files/who-we-are/Standards-of-Business-Conduct_apr.pdf

This EP complies with the applicable Standards of Business Conduct, in particular, the Environment Policy which states:

Environment Policy

It is Exxon Mobil Corporation's policy to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. The Corporation is committed to continuous efforts to improve environmental performance throughout its operations.

Accordingly, the Corporation's policy is to:

- Comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist
- Encourage concern and respect for the environment, emphasise every employee's responsibility in environmental performance, and foster appropriate operating practices and training
- Work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs, and benefits, including effects on energy and product supply
- Manage its business with the goal of preventing incidents and of controlling emissions and wastes to below harmful levels; design, operate, and maintain facilities to this end
- Respond quickly and effectively to incidents resulting from its operations, in cooperation with industry organisations and authorised government agencies
- Conduct and support research to improve understanding of the impact of its business on the environment, to improve methods of environmental protection, and to enhance its capability to make operations and products compatible with the environment
- Communicate with the public on environmental matters, and share its experience with others to facilitate improvements in industry performance
- Undertake appropriate reviews and evaluations of its operations to measure progress and to foster compliance with this policy.

8.1.2 Operations Integrity Management System

ExxonMobil's OIMS Framework establishes common worldwide expectations to address the risks inherent to the business. ExxonMobil uses the term OI to address all aspects of its business impacting personnel and process safety, security, health and environmental (SSHE) performance. The OIMS Framework includes 11 Elements, as shown in Figure 8-1. Each Element contains overarching Objectives, and a set of Expectations. The Corporate OIMS Framework can be found at: <https://corporate.exxonmobil.com/-/media/global/files/risk-management-and-safety/oims-framework-brochure.pdf>

The OIMS Framework also includes the characteristics of and processes for implementing OI Management Systems. Application of the OIMS Framework is required across the entire ExxonMobil enterprise, with a specific emphasis on design, construction and operations.

The Upstream has defined 22 Upstream OIMS, as described in Table 8-1. System 1-1 is the driver to ensure effectiveness of all 22 Systems. Each Upstream System includes a description of the System objectives (including associated Corporate OIMS Expectations, where applicable) and scope, with listed processes, procedures, and verification mechanisms that meet those objectives.

The OIMS Management Committee has overall accountability for the implementation, execution, and continuous improvement of OIMS within Esso.

Key responsibilities of the OIMS Management Committee include:

- demonstrate commitment to OIMS through active and visible participation in OIMS implementation, execution and improvement

- ensure that Annual System Reviews are conducted
- review key OI performance indicators that show the status and effectiveness of OIMS implementation and execution
- periodically review OI incidents for learning and continuous improvements to OIMS.



Figure 8-1 Operations Integrity Management System Framework

Table 8-1 Description of Upstream OIMS

Corporate OIMS Element	Upstream OIMS		
	Number	Title	Linked Corporate OIMS Expectations
1 Leading, Managing and Driving Performance	1-1	Leading, Managing and Driving Performance	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11
	1-2	Partner Management	1.12
2 Identifying, Assessing, Mitigating and Accepting Risk	2-1	Risk Assessment and Management	2.1, 2.2, .2.3, 3.2, 4.2, 6.6
3 Designing, Constructing and Preparing for Start Up	3-1	Project Execution Management	3.1, 3.6
	3-2	Managing Design Practices, Standards, and Deviations	3.3, 3.4, 3.7
	3-3	Quality Assurance	3.5

Corporate OIMS Element	Upstream OIMS		
	Number	Title	Linked Corporate OIMS Expectations
4 Providing Information Needed for Construction, Operation and Maintenance	4-1	Information Management	4.1
5 Selecting, Training, Engaging and Enabling People	5-1	Selecting, Training, Engaging and Enabling People	5.1, 5.2, 5.3
	5-2	Occupational Health Management	4.3, 4.4, 4.5*
	5-3	Security Management	*
	5-4	Personnel Safety Management	5.6
6 Operating and Maintaining Assets	6-1	Operating and Maintenance Procedures	5.5, 6.1
	6-2	Facility Integrity Management	6.4, 6.5
	6-3	Well Management	*
	6-4	Work Management	6.2, 6.3
	6-5	Environmental and Regulatory Management	6.7, 4.5
7 Managing Changes	7-1	Managing Changes	7.1
8 Selecting and Engaging with Third-Party Providers	8-1	Selecting and Engaging with Third-Party Providers	8.1, 8.2, 8.3
9 Learning from Operating Experience and Incidents	9-1	Learning from Operating Experience and Incidents	9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7
10 Preparing for Emergencies and Managing Potential Risk to the Community	10-1	Community Risk Management	10.2
	10-2	Preparing for Emergencies	10.1
11 Assessing and Driving Effectiveness	11-1	Assessing and Driving Effectiveness	11.1, 11.2

* Upstream OIMS supports multiple Corporate OIMS Expectations.

Esso has determined the following OIMS are required for the implementation of this EP:

- **OIMS 1-1:** Management Leadership, Commitment and Accountability
- **OIMS 4-1:** Information Management
- **OIMS 4-2:** Compliance with Laws, Regulations and Permits

- **OIMS 5-1:** Personnel Selection, Training and Competency Verification
- **OIMS 5-2:** Personnel Training
- **OIMS 6-2:** Facility Integrity Management
- **OIMS 6-3:** Well Management
- **OIMS 6-4:** Work Management
- **OIMS 6-5:** Environmental Management
- **OIMS 7-1:** Management of Change
- **OIMS 8-1:** Third-Party Services
- **OIMS 9-1:** Incident Management
- **OIMS 10-1:** Community Awareness and Public Affairs
- **OIMS 10-2:** Emergency Preparedness and Response

How each of these OIMS Systems are implemented to meet the requirements of this EP is described in the following sections.

8.2 OIMS 1-1: Management Leadership, Commitment and Accountability

In accordance with OIMS 1-1, Esso has defined the roles and responsibilities relevant to this EP.

8.2.1 Roles and responsibilities

As required by OPGGS (Environment) Regulation 22(3), this Section sets out the roles and responsibilities of personnel in relation to the implementation, management and review of this EP.

An indicative organisational chart is provided in Figure 8-2, while Table 8-2 describes the responsibilities of key personnel involved in the activity.

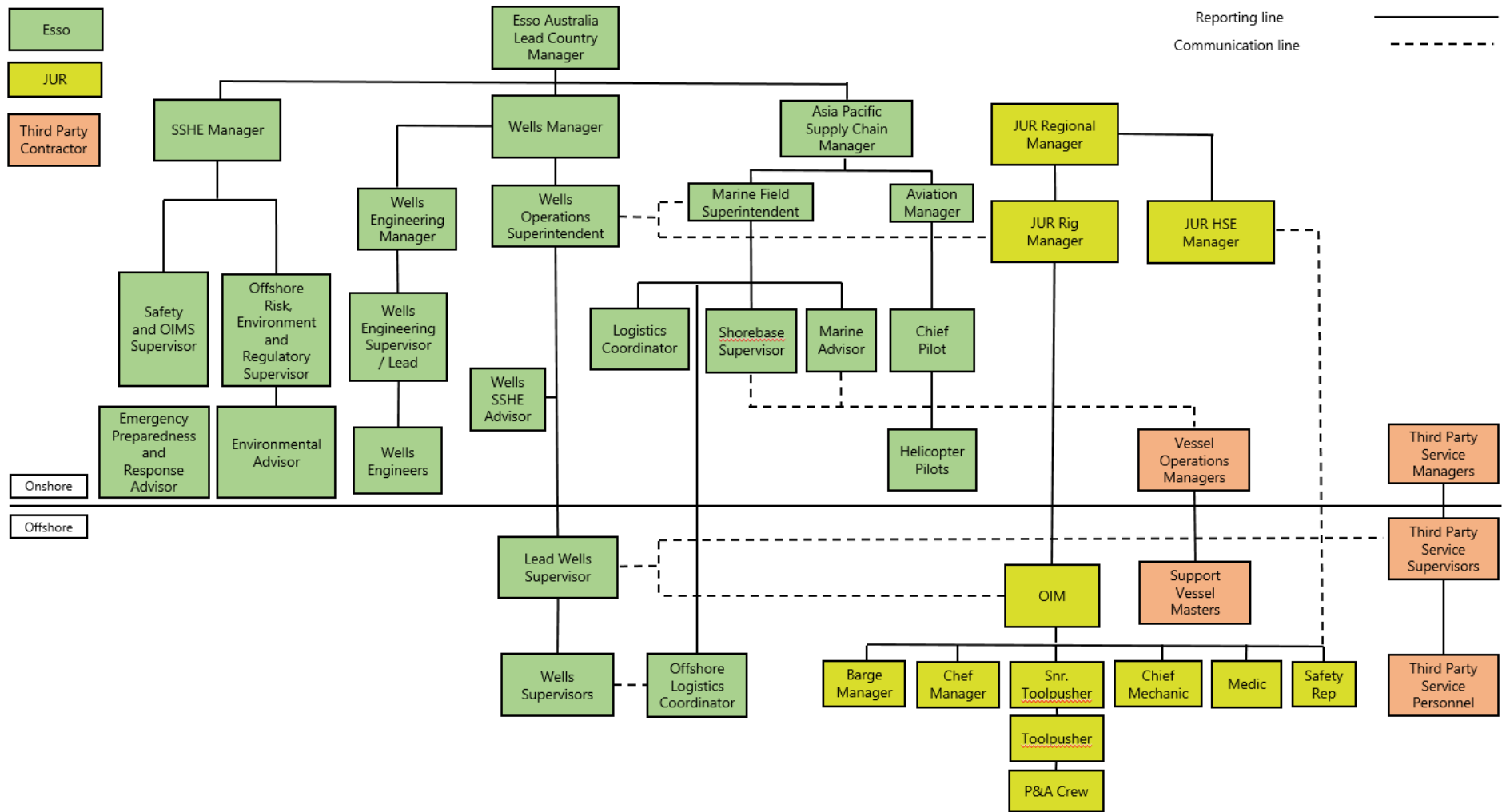


Figure 8-2 Activity-specific organisation chart for this EP

Table 8-2 Activity-specific key roles and responsibilities for this EP

Role	Responsibilities
Wells Operations Superintendent (Esso)	<ul style="list-style-type: none"> • Oversees day-to-day operations to ensure compliance with relevant environmental legislative requirements, commitments, conditions and procedures as provided in this EP. • Primary point of contact between shore-based Wells team and MODU Contractor. • Ensures campaign-related induction is delivered. • Ensures procedures are in place and used effectively for the safe and efficient work management during wells operations. • Ensures prompt follow-up action is initiated and completed after inspections/audits, incidents, and emergency drills. • Member of the Esso Incident Management Team (IMT).
Wells Engineering Manager (Esso)	<ul style="list-style-type: none"> • Ensures an effective organisational structure is in place, with defined roles and responsibilities to ensure implementation of OIMS for wells operations. • Ensures sufficient competent staff to execute wells operations. • Ensures systems are in place to provide technical support and competent field personnel to maintain well integrity during wells operations. • Ensures that arrangements are in place to respond to a well control incident. • Member of the Esso IMT. Facilitates lessons learnt review at completion of P&A campaign.
Wells Operations Supervisor (Esso)	<ul style="list-style-type: none"> • Monitors wells activities to ensure that the relevant environmental legislative requirements, commitments, conditions and procedures as detailed in this EP are being followed. • Maintains clear communication between Esso and JUR personnel. • Facilitates environmental inspections and/or audits. • Ensures follow up actions identified during environmental inspections/audits, incidents and emergency drills are implemented. • Notifies Esso Wells Operations Superintendent of any incidents. • Prepares daily operations reports. • Maintains chemical assessment records and approvals. • Maintains records of all operational discharges. • Reports to regulatory authorities as appropriate, including the reporting of environmental incidents. • Reports reportable incidents to NOPSEMA within 2 hours. • Reports recordable incidents to Environmental Advisor (Esso) for monthly reporting to NOPSEMA. Provide input for annual and/or end of activity environmental performance reporting.
Offshore Risk, Environment and Regulatory Supervisor (Esso)	<ul style="list-style-type: none"> • Ensures all regulatory reporting requirements are met and reports to regulatory authorities as appropriate, including the reporting of environmental incidents. • Coordinates EP compliance audits. • Maintains communication with government agencies.
Environmental Advisor (Esso)	<ul style="list-style-type: none"> • Undertakes duties as delegated by Offshore Risk, Environment and Regulatory Supervisor. • Interfaces between Esso Wells SSHE Advisor and Rig Safety Advisor.

Role	Responsibilities
	<ul style="list-style-type: none"> • Prepares environmental/regulatory content for inductions and ensures personnel receive the induction and that attendance records are maintained. • Completes/coordinates EP compliance audits, as delegated by Offshore Risk, Environment and Regulatory Supervisor. • Undertakes incident investigations. • Completes monthly incident reporting to NOPSEMA. • Completes annual and/or end of activity environmental performance reporting (if delegated by Esso Wells Operations Supervisor).
Helicopter Pilots (Esso)	<ul style="list-style-type: none"> • Implements cetacean interaction management actions consistent with Part 8 Division 8.1 of the EPBC Regulations.
JUR Rig Manager	<ul style="list-style-type: none"> • Main Esso focal point for JUR Contractor. • Review and approval of JUR Safety Case Revisions and related safety and well control interface documentation. • Management of JUR related change approval. Reviews and approves procurement of equipment brought on board JUR.
JUR OIM	<ul style="list-style-type: none"> • Oversees all work activities and work programs ensuring work is undertaken in accordance with procedures, work instructions and in compliance with all legislative requirements and EP commitments. • Ensures all offshore personnel understand their obligations with respect to the management of environmental risk. • Ensures the MODU training matrix is fully implemented. • Ensures rig-entry HSE inductions are conducted. • Ensures waste disposal complies with MARPOL requirements. • Monitors closeout of non-conformances, corrective actions and audit recommendations. • Reports all incidents, near misses and dangerous occurrences to the Wells Operations Supervisor in accordance with the incident reporting system. • Manages and coordinates offshore emergency response activities.
Support Vessel Masters (Vessel Contractors)	<ul style="list-style-type: none"> • Ensures compliance with all applicable navigational safety standards and regulations. • Conducts emergency drills. • Supervises vessel crew to ensure they are fit for duty and undertaking work only within their area of qualification and training. • Monitors, reports and takes appropriate action to remedy any vessel or equipment defects that may impact on safety and environmental performance of the vessel. • Maintains logs of emissions and discharges in accordance with MARPOL regulations. • Ensures that all crew are appropriately qualified, trained and equipped for their roles on the vessel. • Ensures the vessel activities are in compliance with the requirements of this EP. • Reports all incidents and near-misses to the Marine Field Superintendent, Marine Advisor and BBMT Marine Supervisor, recording the details and taking initial actions to render the situation safe. Notification also provided to the JUR OIM and Wells Operations Supervisor in the event the incident or near-miss occurs inside or near the PSZ.

8.3 OIMS 4-1: Information Management

In accordance with OIMS 4-1, Esso implements processes for the identification of integrity critical documents and drawings, as well as making provisions for these to be accessible, accurate and appropriately safeguarded.

In the context of this System integrity critical information is the general term used to refer to both integrity critical documentation and pertinent records.

Processes are also established to ensure records pertinent to this EP are defined and appropriately maintained.

8.4 OIMS 4-2: Compliance with Laws, Regulations and Permits

OIMS 4-2 is used to implement several mechanisms to identify new or amended requirements that may have an impact on this EP, including:

- engagement with government agencies and review of government publications of laws and regulations
- participation in government-sanctioned working committees
- active participation in industry organisations or cooperatives (e.g. Australian Energy Producers (AEP) formerly APPEA)
- active participation in local or international trade organisations
- subscriptions to specialist consultants, commercial publications and government provided subscriptions (e.g. SAI Global, Environment Essentials, COMLAW).

If new, amended or existing requirements are identified, an assessment is undertaken as to their applicability and possible impact on Esso operations and the environment. Environmentally relevant changes could include:

- changes to existing legislation or introduction of new legislation
- 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
- changes to the requirements of an existing external approval (e.g. changes to conditions of environmental licences)
- new information or changes in information from research, stakeholders, legal and other requirements, and any other sources used to inform the EP
- changes or updates identified from incident investigations, emergency response activities or emergency response exercises.

Changes to legislation are screened by the Environmental Advisor before being forwarded to an appropriate subject matter contact for their determination on applicability. A tracking list of emerging/amending regulations and associated current review status is maintained by Esso.

Relevant changes to protected matter are assessed on a periodic basis by the Environmental Advisor, and incorporated into risk assessments, control measures, EPOs and EPSs and implementation strategy in the EP where required.

Changes identified by the Environmental Advisor are reviewed and assessed in accordance with the process outlined in OIMS 7-1.

8.5 OIMS 5-1: Personnel Selection, Training and Competency Verification

In accordance with OIMS 5-1, Esso has processes in place for the selection of competent personnel and to ensure they are trained in the knowledge and skills necessary to meet the requirements of their specific positions and roles. This aligns with the OPGGS (Environment) Regulation 22(4) requirement that the implementation strategy details measures for ensuring that employee and contractors working on, or in connection with, the activity are aware of their responsibilities in relation to the EP, including during emergencies or potential emergencies, and have the appropriate competencies and training.

8.5.1 Personnel selection

8.5.1.1 Esso personnel

Position descriptions for key positions, which could have a significant impact on OI, include the required OI-related competencies and/or experience. This provides the basis for ensuring personnel selection and placement decisions meet specific job requirements. Personnel performing tasks with environmental aspects and impacts/risks will have the knowledge and skills necessary to perform their work in a manner consistent with the Environment Policy and the requirements of OIMS System 6-5.

The placement of personnel is subject to verification of completion of any needed training and/or experience, and demonstration of the required competencies for the performance of the job. The extent of initial, ongoing and refresher training provided is based on established requirements for OI-related training and an individual's competency and/or experience gaps. These training requirements are documented in a training plan. The requirements may be met through training and/or developmental activities (i.e. training assignments).

Learning management systems are used for competency tracking, e-learning, training, scheduling and tracking of re-qualification requirements. Training progress is reviewed periodically by an individual's Supervisor. Any new training requirements are completed per the training plan.

In addition to the process of assuring that a person is competent in the knowledge and skills necessary to perform in a position, an assessment of the individual's performance and behaviours in that position is conducted annually. The performance assessment process includes OI aspects and behaviours such as compliance with OIMS Systems and associated procedures.

8.5.1.2 Third-party service providers

Job-specific OI requirements are defined and communicated to third parties during the contracting process and included in third-party contracts.

Each third-party service provider is required to maintain training files for their personnel. Selected providers undergo a validation process in which Esso verifies these records as part of the initial contracting process and at a minimum annually for OI critical contractors.

8.6 OIMS 5-2: Personnel Training

In accordance with OIMS 5-2, Esso has developed training programs, specific to this EP, that are implemented for Esso personnel and contractors.

8.6.1 Environmental induction

All personnel involved in activities related to this EP undergo environmental awareness training prior to the activities commencing as part of their induction. The environmental awareness component of the induction includes:

- environmental regulatory requirements
- description of the environmental sensitivities and conservation values of the OA and surrounding waters
- roles and environmental responsibilities of key positions as defined in this EP
- overview of cetacean interaction management actions consistent with Part 8 Division 8.1 of the *Environment Protection and Biodiversity Conservation Regulations 2000*
- overview of waste management requirements
- chemical discharge assessment and approval process requirements
- overview of housekeeping and spill prevention
- procedures for reporting reportable and recordable environmental incidents
- overview of emergency response and spill management procedures.

The Esso Wells Operations Superintendent and Esso Environmental Advisor are responsible for ensuring personnel receive this induction prior to the commencement of activities. All induction attendees will sign an attendance sheet to confirm their participation in, and understanding of, the induction which will be retained by the Esso Environmental Advisor.

JUR and support vessel personnel receive Esso environmental familiarisation. The familiarisation material includes specific EP requirements and definition of an environmental incident.

8.6.2 Oil spill response

In accordance with OPGGS (Environment) Regulation 22(4), this implementation strategy describes the processes by which Esso ensures personnel have the appropriate competencies and training to undertake their roles and responsibilities in emergency situations.

8.6.2.1 Training

Appropriate training will be made available to specific personnel required to undertake a role in oil spill response. Personnel with an oil spill response role will undertake incident management training including Incident Command System (ICS) and oil spill response specific training, as defined by their role and in accordance with the roles' training plan. The training program has been designed to meet the PMA08 Chemical, Hydrocarbons and Refining training standard and includes the courses and topics as outlined in Table 8-3.

Table 8-3 Oil spill response training

Training/course	Delivered by	Training description
ICS 100 and 200 training	Various accredited organisations	ICS 100 and 200 training consists of computer-based training which addresses fundamental principles of the ICS including key roles and functions.
ICS 300 training	Various accredited organisations	ICS 300 training is instructor led training that expands upon the information covered in the ICS 200 course.
Australian Marine Oil Spill Centre (AMOSC) Core Group training	AMOSC	Training provided in accordance with the AMOSC Core Group agreement. Personnel also participate in bi-annual training, exercise or response activities in order to maintain their competency.
Oil spill response training program	ExxonMobil University of Spill Management	<p>This course provides the fundamentals of oil spill response and a broad overview of response activities with a focus on the practicality and limits when responding to an oil spill. This course is aimed at personnel who fulfil a role within the Esso IMT. The course combines theory, desktop exercises and field deployment of response equipment. The course is jointly run by ExxonMobil personnel along with specialist contractors and the local oil spill response organisation. The course is generally run over four days. The course content covers:</p> <ul style="list-style-type: none"> • oil spill response concepts • decision processes • corporate policies and preferences • fate, behaviour, tracking and surveillance • response options: mechanical, in-situ burning, dispersants, monitoring and surveillance • response components • practical realities • common misconceptions • hands-on equipment deployment. <p>On completion of the training program, participants are certified in ICS 100-200. ICS 300 certification may also be obtained</p>

Training/course	Delivered by	Training description
		through where the training provider is accredited to provide this certification.
IMO I – Oil Spill Response Operations	Various accredited organisations	Designed for all personnel who may be called upon to act as an oil spill first responder and to participate in an oil spill clean-up.
IMO II – Oil Spill Response Management (or equivalent)	Various accredited organisations	An alternative to the Oil spill response training program delivered by the ExxonMobil University of Spill Management. Training aimed at IMT personnel.
IMO III – Command and Control (or equivalent)	Various accredited organisations	Required for personnel identified to fulfil a Tier 2/3 Incident Commander role.
Aerial surveillance course	AMOSC and Oil Spill Response Limited	<p>The course is typically run over two days and includes theory and practical activities including:</p> <ul style="list-style-type: none"> • basic hydrocarbon theory and its relevance to aerial surveillance • basic understanding of how to work in an aviation crew environment • how to effectively plan and coordinate an aerial surveillance flight • how to carry out the plotting and recording of oil spill information <p>how to present oil spill information back through the Esso IMT in a clear and coherent manner.</p>
Emergency Support Group (ESG) training	ExxonMobil (Esso)	<p>The ESG course is used to train ESG members in the ESG process as well as provide an overview of ExxonMobil’s emergency response structure. This is an internally run course which combines theory and a number of simulation exercises. The course is typically run over 2.5 days.</p> <p>Course objectives are to:</p> <ul style="list-style-type: none"> • increase awareness of the ExxonMobil emergency response system and the underpinning principles • assist in achieving a consistent approach to the ESG response process across the Corporation • familiarise participants with roles and responsibilities within the ESG and the interface with other responders and stakeholders • provide an opportunity for participants to practice roles • improve ESG leadership and communication skills • build the confidence of participants in responding as a team and individually • enhance ExxonMobil’s commitment to a consistent approach to emergency response.

Training/course	Delivered by	Training description
Oil spill response equipment operation training	Esso, supported by AMOSC, Oil Response Company of Australia or another training provider	<ul style="list-style-type: none"> Provides familiarisation with oil spill equipment operation, deployment and shoreline clean up techniques through dedicated training sessions and/or through participation in exercises. Selected personnel may also be nominated to attend IMO I – Oil Spill Response Operations.

8.6.2.2 Oil Spill Response roles

Esso IMT members are selected based on skills and experience. Nominations are reviewed by the OIMS System 10-2 System Owner (to ensure training and competency requirements have been met or appropriate management measures have been put in place) and approved by the asset manager. A road map of Emergency Preparedness and Response required competencies is assigned to the new incumbent. A training plan is put in place and the OIMS System 5-1 mitigation approval process applies.

The selection of the Environmental Unit Lead is based on relevant experience as an Environmental Advisor, with experience and/or training in the implementation of scientific monitoring. Minimum requirements include involvement in drills and spill exercises, management of marine monitoring programmes, such as produced formation water monitoring, and monitoring of parameters relating to offshore drilling and operations activities. In addition, the minimum requirement includes a relevant tertiary degree in engineering, environmental science, environmental management or similar.

Esso also allocates members to an ESG, which provide strategic support in the event of an oil spill or other emergency event and contributes personnel to ExxonMobil’s Regional Response Team (RRT). The ExxonMobil RRT includes personnel with experience and/or training in oiled wildlife response. These personnel are able to provide above-field support to an oiled wildlife response through development of response plans and coordination of specialist resources.

Selected ExxonMobil personnel have been identified as members of the AMOSC Core Group and may be called upon to respond under the AMOSC Plan and National Plan arrangements.

Esso also have a Source Control Branch (SCB) who specialise in source control in relation to a controlled or uncontrolled well control scenario. Personnel involved in SCB management (i.e. Branch Director/Deputy Branch Director) will have the minimum competencies and training or meet requirements recognition of prior learning and experience the source control branch is detailed in the Australia wells Tier II/III Emergency Response plan and summarised in Section 8.6.2.3.

8.6.2.3 Esso Source Control Branch

In a large-scale emergency response effort, the Source Control Branch is responsible for disabling the source of the incident while minimising the impact to People, Environment, Assets and Reputation (PEAR).

In a Wells-related Tier II / III incident, the Australian Wells Team will assume responsibility for Source Control Branch activities.

The structure of the source control branch can be seen in Figure 8-3. The Summary of responsibilities can be seen in Table 8-4

The source control branch members remain on call as part of their job descriptions. Source control branch members will be called upon based on the internal notification processes as soon as an offshore emergency has been activated, using the same call out process as the Offshore IMT.

The Australia wells Tier II/III Emergency Response plan also contains all key information for contacting and mobilising key resource partners such as AMOSC, OSRL, and Wild Well Control based on existing contracts in place.

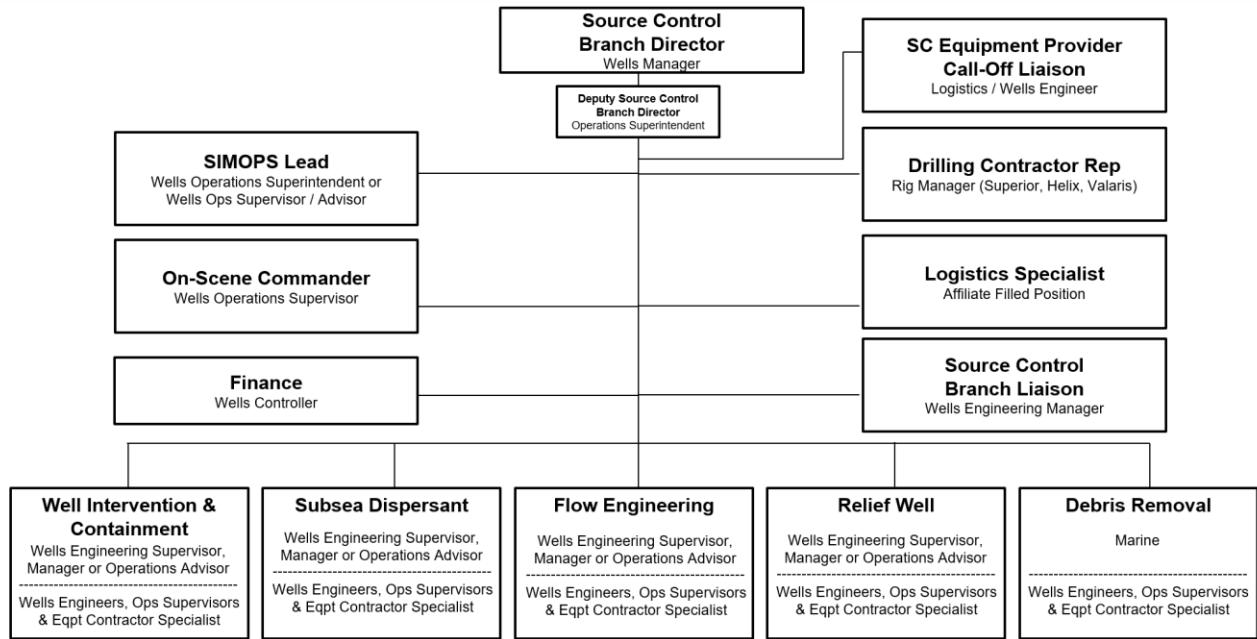


Figure 8-3 Source Control Branch Structure

The Source Control Branch (SCB) Director or delegate Deputy Source Control Branch Director is responsible for planning and executing tactics related to source control to achieve the incident objectives set by the Incident Commander. The size of the SCB Support Staff is dictated by the needs of the incident response. Their primary role during the incident is to support the SCB as described in the ExxonMobil Source Control Branch Incident Management Handbook (SCB IMH).

Table 8-4 Summary of Responsibilities: SCB Director/Command Staff

Source Control Branch Director & Deputy-Director
<ul style="list-style-type: none"> Implementation of (operational) tactics based on overall Incident Objectives as established by the Incident/Unified Command Source Control Exclusion Zone defines overall physical scope of responsibility
<p>Source Control Branch – Command Staff (applicable if Source Control Branch is not co-located with IMT)</p> <ul style="list-style-type: none"> When needed, these individuals serve in their traditional roles, specifically supporting the Source Control Branch; if the IMT and SCB are co-located, the IMT may offer these services Includes access to the Law Officer, HR Officer, Safety Officer, Liaison Officer, Risk Assessment Lead, Public Information Officer, all of whom should be familiar with Wells/Drilling expectations and services <p><i>NOTE: Independent of the Response Tier, these specific functions would continue to support Wells organisation by interfacing with ESG and integrating with the IMT</i></p>
<p>Source Control Branch – Planning</p> <p>Manages the collection, evaluation, dissemination and use of incident information, and maintaining the status of assigned resources.</p>
<p>Source Control Branch – Logistics</p> <ul style="list-style-type: none"> Provides facilities, services and material in support of the incident.

Source Control Branch Director & Deputy-Director
Source Control Branch – Finance (as applicable)
<ul style="list-style-type: none"> Manages all financial, administrative, claims and cost analysis aspects of the incident

Table 8-5 Summary of Responsibilities: On-scene Command / Staging Area

On-scene Commander
<ul style="list-style-type: none"> Oversees the execution of the tactics dictated by the SCB Director Maintains the right to stop operations at any time
Staging Area Manager
<ul style="list-style-type: none"> Call out vessels/aircraft, materials, etc. based on SCB needs Ensures all equipment is received, tracked (costs and whereabouts) and demobilised effectively Reports to the SIMOPS Lead

The Site Survey, Well Intervention, & Capping Group are responsible for initial site survey, stewarding intervention through existing BOP (if possible), deployment / installation of a capping stack, well shut-in procedure, and flowback installation / operation. The Well Intervention & Containment Group receives guidance from the Source Control Branch Director and the Well Intervention & Containment Group Supervisor. This team works closely with the Flow Engineering Team to design the shut-in procedure appropriate for the well, as well as any other modeling or engineering analysis required for installation of the capping stack.

For the staffing profile for this Group, see the ExxonMobil SCB IMH.

The Relief Well Group is responsible for planning, procurement and execution of the relief well. Depending on the circumstances of the event, support would be provided by Reservoir Geoscience. In the event of an incident, the Relief Well Group would be led by the Relief Well Group Supervisor (or delegate).

8.6.2.4 Role-specific competencies and training

Mandatory competencies and training provided to specific personnel required to undertake a role in oil spill response are outlined in Table 8-6.

Table 8-6 Mandatory competencies and training for oil spill response roles

Section	Role	Mandatory competencies and training
Command	Incident Commander	<ul style="list-style-type: none"> Incident Management training (PMAOMIR418). Oil Spill Response training. International Maritime Organisation (IMO) III – Command and Control training (for Level II/III incidents). Participate in regular drills and exercises.
	Safety Officer	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in implementing safety management systems. Participate in regular drills and exercises.
	Liaison Officer	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). Participate in regular drills and exercises.

Section	Role	Mandatory competencies and training
Planning	Planning Section Chief	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in fulfilling Planning Section Chief role. Participate in regular drills and exercises.
	Environment Unit Lead*	<ul style="list-style-type: none"> IMO II – Oil Spill Management. Incident Management training (PMAOMIR320). Familiarity with Bass Strait Operational and Scientific Monitoring Program (AUGO-EV-EPL-001). Known as the Bass Strait OSMP – Refer to Attachment 2. Participate in regular drills and exercises.
	All other roles	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in fulfilling Planning Section role.
Operations	Operations Section Chief	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in fulfilling Operations Section Chief role. Participate in regular drills and exercises.
	Maritime Unit	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in marine operations. Participate in regular drills and exercises.
	Aviation Unit	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control, Experience in aviation operations. Participate in regular drills and exercises.
	Aerial Observer	<ul style="list-style-type: none"> Aerial surveillance course.
	Source Control Branch Director/Deputy Director (for LOWC incidents)	<ul style="list-style-type: none"> ICS 300. Participate in regular drills and exercises.
	Source Control Branch – team member	<ul style="list-style-type: none"> ICS 100/200. Participate in regular drills and exercises.
Logistics	Logistics Section Chief	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control, or Oil spill response training program (ExxonMobil University of Spill Management). Participate in regular drills and exercises. Experience in fulfilling Logistics Section Chief role.

Section	Role	Mandatory competencies and training
	All other roles	<ul style="list-style-type: none"> Incident Management training (PMAOMIR320). IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in logistic operations.
Finance and Administration	Finance and Administration Section Chief	<ul style="list-style-type: none"> ICS 200. Participate in regular drills and exercises.
	All other roles	<ul style="list-style-type: none"> ICS 200.
Operations and Maintenance	Selected personnel at Esso’s facilities	<ul style="list-style-type: none"> Oil spill response equipment operation training. Participate in regular drills and exercises.
RRT	All RRT members and select Esso IMT members	<ul style="list-style-type: none"> Oil spill response training program (ExxonMobil University of Spill Management). RRT training workshop. Role-specific training, as required.
ESG	All ESG members and select Esso IMT members	<ul style="list-style-type: none"> ESG training. Participate in regular drills and exercises.
AMOSC Core Group	All members	<ul style="list-style-type: none"> IMO I – Oil Spill Response Operations. AMOSC Core Group training.

* When the Esso Incident Management Team is activated, the Environmental Unit Lead becomes responsible for managing implementation of the Bass Strait OSMP Modules, as directed by the Planning Section Chief.

8.7 OIMS 6-2: Facility Integrity Management

OIMS 6-2 requires that the OI of all Esso-owned or controlled critical equipment is maintained over the operating life of the equipment, preventing or mitigating a significant event that could result in significant SSHE consequences. This is achieved through implementation of:

- a systematic, risk-based approach, which is used to identify critical equipment and develop equipment strategies
- integrity programs, which are developed, approved, and executed at all locations for the OI of critical equipment
- programmatic condition monitoring, preventive maintenance, inspection, and/or testing of critical equipment, or other measures to minimise the impact of failure.

8.8 OIMS 6-3: Well Management

In accordance with OIMS 6-3, Esso has processes in place to document, understand, and effectively execute well work programs. Well integrity activities are in place to effectively address OI for all well types and well status.

8.9 OIMS 6-4: Work Management

Work activities at Esso-owned, managed or controlled sites are undertaken in a structured and controlled manner to reduce the risk of incidents, in accordance with OIMS System 6-4. This System provides a structure for managing the risks associated with the work to be performed and confirming that interfaces with the work activities are appropriately considered.

In relation to this EP, work activities are managed through implementation of the following processes:

- work permits are executed to protect personnel, equipment, and the environment from mechanical and operational risks
- controls are in place for the temporary disarming, deactivation, or unavailability of integrity critical equipment
- work interfaces are evaluated and procedures are in place to manage identified risks, including hand-over and simultaneous operations.

8.10 OIMS 6-5: Environmental Management

In accordance with OPGGS (Environment) Regulation 22(5) the implementation strategy must provide for sufficient arrangements for monitoring, recording, audit, management of non-conformance and review of environmental performance and the implementation strategy to ensure that the EPOs and EPSs in the EP are being met. The majority of these requirements are met through the implementation of OIMS System 6-5, with the exception of recording (see OIMS 4-1) and management of non-conformance (see OIMS System 9-1).

8.10.1 Environmental management

OIMS 6-5 specifically addresses corporate requirements for environmental management, including socioeconomic and community health aspects. This includes the fundamental requirement to develop Environmental Management Plans (EMPs) which identify and assess all environmental aspects, impacts and risks associated with Esso's activities, facilities and ongoing operations. The EMPs must also describe how the impacts and risks are addressed and controlled. As such, this EP meets the OIMS System 6-5 requirement for an EMP for the activities outlined in this EP.

In addition, OIMS System 6-5 includes processes and procedures for managing environmental impacts, such as the: Environmental Chemical Discharge Assessment Process (AUGO-EV-PCE-013) ; IMS Risk Assessment Procedure (AUGO-EV-PCE-014); and wet storage assessment, as discussed in the following sections.

8.10.1.1 Chemical discharge assessment process

Esso assesses all chemicals that are likely to be discharged during the activities described in this EP. The chemical discharge assessment process is triggered by the Management of Change (MOC) process. The introduction of a new chemical to Esso's facilities requires assessment for environmental and safety suitability in accordance with the Workplace Substances Manual (AUGO-PO-WSM-MOHLINK).

Chemicals that have the potential to be discharged into the marine environment must be screened per Esso's Environmental Chemical Discharge Assessment Process (AUGO-EV-PCE-013) to identify if the chemical is considered to be environmentally hazardous in the marine environment. The objective of this process is to promote the selection of chemicals with the lowest possible toxicity for use in operational activities and to reduce the potential environmental impact of a discharge or unplanned release to ALARP and acceptable levels. Esso maintains preference for chemicals with low toxicity that meet the technical needs of the chemical application without compromising the safety of personnel.

The procedure is designed in compliance with international standards that include:

- OCNS
- Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention')
- Centre for Environment, Fisheries and Aquaculture Science (CEFAS).

In the absence of Australian standards regarding the suitability of well operations fluid chemical additives, the OCNS is generally used as a basis for selecting environmentally acceptable chemicals in the Australian offshore petroleum industry. The OCNS manages chemical use and discharge by the UK and Netherlands offshore petroleum industries. The scheme is regulated in the UK by the Department of Energy and Climate Change using scientific and environmental advice from the UK's CEFAS and Marine Scotland.

The OCNS uses the Harmonised Mandatory Control Scheme developed through the OSPAR Convention. This ranks chemical products according to Hazard Quotient, calculated using the CHARM model (CHARM

Implementation Network, 2017. The CHARM model requires the biodegradation, bioaccumulation and toxicity data of the product to be provided.

Under the OSPAR Convention, organic-based compounds used in production, completion and workovers, drilling and cementing are subject to the CHARM model. The CHARM model calculates the ratio of the 'Predicted Effect Concentration' against the 'No Effect Concentration' expressed as a Hazard Quotient, which is then used to rank the product. The Hazard Quotient is converted to a colour banding to denote its environmental hazard, which is then published on the *Definitive ranked lists of registered products* (OCNS, 2022). Gold has the lowest hazard, followed by silver, white, blue, orange and purple (having the highest hazard).

Products not amenable to assessment under the CHARM model (i.e. inorganic substances, synthetic based muds, hydraulic fluids or chemicals used only in pipelines) are assigned an OCNS grouping A – E, with 'A' having the greatest potential environmental hazard and 'E' having the least. Products that only contain substances that pose PLONAR to the environment are given the OCNS 'E' grouping. Data used for the assessment includes toxicity, biodegradation and bioaccumulation.

Chemicals that are hazardous to the marine environment are subject to substitution warnings under the Harmonised Mandatory Control Scheme. The UK follows and applies the OSPAR harmonised pre-screening scheme and complies with the recommendation of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), to replace chemical substances identified as candidates for substitution. These substances are flagged with a substitution warning on the product template and CEFAS encourages operators to select products without a substitution warning.

Only chemicals ranked under the OCNS rating system as 'Gold' or 'Silver' (CHARM) and 'E' or 'D' (non-CHARM) with no substitution warning will be approved for discharge without further assessment.

Where no OCNS ranking is available for a chemical but ecotoxicity data is available, an equivalence check can be completed to establish if it would have a substitution warning. The equivalence check will be completed in accordance with the assessment process outlined by CEFAS for the OCNS scheme. A chemical will be considered to be 'equivalent' if it is assessed to not have a substitution warning according to the criteria defined by OCNS (<https://www.cefas.co.uk/cefas-data-hub/offshore-chemical-notification-scheme/substitution-warning/>).

If a chemical is not on the OCNS list, has a substitution warning (or equivalent) or has limited ecotoxicity data available, then further assessment is required to determine if the chemical is suitable for discharge to the marine environment. This assessment can include:

- details of the technical requirement for this product and review of any possible alternative chemicals
- assessment of impacts to the receiving environment from discharge in the relevant scenario
- consideration of additional restrictions or controls to the approval e.g. timeframes for use, periodic reassessment
- seeking guidance from toxicity experts
- whole effluent toxicity testing the chemical in the discharge to determine if the environmental impact is beyond the mixing zone; and/or
- completing chemical dispersion modelling in the local environment.

8.10.1.2 Invasive marine species risk assessment process

Esso's IMS Risk Assessment Procedure (AUGO-EV-PCE-014) was developed to complement Australian IMS prevention efforts in the context of Esso's operations offshore in Bass Strait. The assessment is undertaken prior to the mobilisation of a vessel (inclusive of MODUs) to an Esso OA (as defined under the EP for the activity). The IMS Risk Assessment Procedure (AUGO-EV-PCE-014) incorporates key considerations from other established risk assessment processes.

8.10.1.3 Wet storage assessment

Environmental assessment conducted under the MOC process includes assessment against OPGGS Act Section 572. In the event that a change results in out-of-service equipment and/or structures or pieces of equipment being temporarily left on the seabed, an assessment is completed to ensure:

- impacts and risks continue to be reduced to ALARP and acceptable levels

- requirements under OPGGS Act Section 572 continue to be met
- that a plan is in place to safely remove structures or equipment when reasonably practicable.

This assessment must include the following considerations, where applicable:

- management of NORM
- management of any potential leaks/seeps of chemicals and hydrocarbons
- equipment or infrastructure wet stored on the seabed within the PSZ or 200-metre operational zone around pipelines
- impact to benthic communities through smothering
- integrity status
- the size, configuration, weight and height above seabed where relevant.

8.10.2 *Audit, inspection and assessments*

8.10.2.1 *Inspections - Campaign activities*

A due-diligence pre-activity inspection of the JUR will be carried out after contract award and prior to the work commencing to ensure all controls listed in the EP to achieve the EPSs and EPOs are ready to be implemented prior to the activities commencing and to verify that procedures and equipment for managing routine discharges and emissions are in place (as described in pre-qualification material) to enable compliance with the EP.

A rig inspection checklist will be completed at commencement of the activity and quarterly thereafter by the Esso Wells Operations Supervisor, in conjunction with the Rig Superintendent, and issued to the Esso Environmental Advisor for review.

Throughout the campaign a monthly EP compliance check of EPSs and EPOs will be conducted and issued to the Esso Environmental Advisor for review and as the basis for the monthly recordable incident report (OIMS 9-1).

8.10.2.2 *Inspections - Vessel activities*

In addition to the third-party services OIMS evaluation under System 8-1 a pre-mobilisation inspection is undertaken for all vessels to communicate specific EP requirements and to ensure that procedures and equipment for managing routine discharges and emissions are in place to enable compliance with this EP.

Vessels will conduct their own HSE inspections, which will be provided to Esso for ongoing compliance monitoring. These will be discussed in the quarterly review.

8.10.2.3 *Audits - Environment Plan compliance*

Esso will undertake an annual compliance audit of the commitments contained in this EP and assess the effectiveness of the implementation strategy. Any non-compliance with this EP will be subject to investigation and follow-up action as detailed in Section 8.13.1.

Any opportunities for improvement or non-compliances noted will be communicated to all relevant personnel at the time of the audit to ensure adequate time to implement corrective actions. The findings and recommendations of inspections and audits will be documented and distributed to relevant personnel for comments, and any actions tracked until closed out.

Results from the environmental inspections and audits will be summarised in the campaign specific EP environmental performance report(s) submitted to NOPSEMA on an annual basis.

8.10.3 *Environmental performance review*

Environmental performance assurance of the activity will be undertaken in a number of ways. Performance assurance is undertaken to ensure that:

- controls are implemented in accordance with EPSs to achieve the EPOs
- non-compliances and opportunities for improvement are identified
- environmental monitoring and reporting requirements are met.

8.10.3.1 *Daily rig calls*

Daily rig calls are undertaken to keep all personnel involved up to date with the activities that are planned for the day and allows for input from the management team to assist with work planning.

8.10.3.2 Toolbox meetings

Toolbox meetings are conducted twice daily to plan for any events that are occurring during the shift. This allows for relevant permits and risk assessments to be undertaken and to make sure that personnel completing the tasks understand all the associated safety and environmental risks.

Environmental matters will be included in daily toolbox talks as required for the specific work task being risk assessed.

Environmental issues will also be addressed in daily or weekly HSE meetings. All JUR crew will participate in these meetings with the JUR OIM and Esso Wells Supervisor in discussing HSE matters that have arisen during that day or week’s operations, and upcoming issues to consider. Outcomes will be documented in HSE meeting minutes.

8.10.3.3 Completion of activity

The Wells team conducts regular reviews of key performance indicators such as incident reports (including spills), regulatory compliance and types/volumes of waste disposed.

The HSE team on board the JUR meets on a monthly basis specifically to review and assess environmental issues and initiatives. Personnel from the JUR, Esso and other contractors attend where possible.

At the completion of the P&A campaign, a lessons learned review and assessment will be conducted to determine:

- the effectiveness of control measures
- improvements in procedures or processes for future campaigns.

8.10.4 Monitoring of emissions and discharges

In accordance with OPGGS (Environment) Regulation 22(6) the implementation strategy must provide for sufficient monitoring of, and maintain quantitative records of, emissions and discharges (whether occurring during normal operations or otherwise), such that the record can be used to assess whether the EPOs and EPSs in the EP are being met.

For JUR-based activities, the Esso Wells Operations Supervisor is responsible for collecting emissions and discharges data and reporting to the Esso Environmental Advisor.

A summary of these results will be reported in the EP environmental performance report submitted to NOPSEMA. Table 8-7 summarises the monitoring requirements for routine operations.

The process for managing environmental monitoring records is addressed through OIMS System 4-1.

Table 8-7 Summary of monitoring of emissions and discharges

Aspect	Monitoring	Frequency	Reporting
Ballast water uptake/discharge	Volume Location	Per event	End of activity environmental performance report.
Planned cement discharge	Cement additives used	Daily	End of activity environmental performance report.
Planned operational discharges – surface (i.e. circulation fluids, interface fluids, tank washings, new sodium chloride brine)	Components of fluids discharged at surface	Per event	End of activity environmental performance report.
	OIW content of interface fluids/tank washings	Daily	
Spill to sea	Chemical/oil type	By incident event	Incident report.

Aspect	Monitoring	Frequency	Reporting
	Volume		End of activity environmental performance report.
Release of waste to sea	Waste type	By incident event	Incident report. End of activity environmental performance report.
Dropped object to sea	Object type	By incident event	Incident report. End of activity environmental performance report.
Atmospheric emissions	Fuel consumption Estimated venting	Tallied at end of activity from daily reports	Daily reports.

8.10.5 Reporting

Regulation 51 of the OPGGS (Environment) Regulations requires the reporting of environmental performance of this EP.

The OPGGS (Environment) Regulation 227) states that the implementation strategy must:

- state when the titleholder will report to the Regulator in relation to the titleholder's environmental performance for the activity
- provide that the interval between reports will not be more than one year.

In addition to environmental performance reporting, OPGGS (Environment) Regulation 54 requires notifying NOPSEMA of the start and end of activity and Regulation 46 requires notifications that all of the obligations under the EP have been completed.

The routine reporting requirements required for this EP are described in Table 8-8.

Table 8-8 Routine Environment Plan reporting requirements

Requirement	Timing	Contact
Environmental Performance Report	Annual	NOPSEMA – submissions@nopsema.gov.au
Submit an end of activity EP environmental performance report to NOPSEMA	The end of activity EP environmental performance report will be submitted to NOPSEMA within 3 months of the completion of the P&A campaign.	
Notify NOPSEMA of the commencement date	At least 10 days prior to activity.	
Notify NOPSEMA of the completion date	Within 10 days of activity completion.	

Requirement	Timing	Contact
Notification of EP completion	Within 10 days of activity finalisation and obligation completion.	

8.11 OIMS 7-1: Management of Change

Esso has developed MOC tools and procedures to meet the requirements outlined in OIMS System 7-1. Environmentally relevant changes which could trigger the MOC process 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, or
 - authorised in the existing management plans, procedures, work instructions or maintenance plans.
- proposed changes to activities, assets, equipment (including change of status), processes or procedures that have the potential to impact on the environment or interface with an environmental receptor
- changes to the existing environment including (but not limited to) fisheries, tourism and other commercial and recreational uses, and any changes to protected areas, plans or requirements for protected species
- changes to the requirements of an existing external approval (e.g. changes to conditions of environmental licences)
- new information or changes in information from research, stakeholders, legal and other requirements, and any other sources used to inform the EP
- changes or updates identified from audits, inspections and assessments, incident investigations, emergency response activities or emergency response exercises.

OIMS 7-1 MOC is a structured process, involving relevant engineers, technicians, operations and maintenance personnel and SSHE specialists to evaluate the potential consequences of the proposed change, and to seek the endorsement of all potentially impacted parties.

The MOC process is implemented electronically and requires a number of assessments which include technical, regulatory, safety and environmental assessments. A mandatory screening checklist is undertaken for all work being assessed under the MOC process to identify the potential for a change to, or increase in, environmental impacts. MOCs which identify potential change to or increase in environmental impacts during screening require completion of an environmental checklist. A mandatory regulatory checklist is also completed to identify if proposed activities will result in a change to the EP. Environmental and regulatory checklists are reviewed and approved by an Environmental and Regulatory Advisor.

The Environmental and Regulatory Advisor reviews the MOC in accordance with OPGGS (Environment) Regulation 39. A revision of the EP will be required under OPGGS (Environment) Regulation 39 in the event that a proposed change:

- constitutes a new stage or significant modification, or
- introduces a significant new environmental impact or risk, or
- significantly increases an existing environmental impact or risk.

Minor changes, which do not trigger a resubmission under OPGGS (Environment) Regulation 39, may result in administrative updates to this EP which are documented in a change register.

Esso also has a comprehensive process to identify amended and new regulations which is described in OIMS System 4-2.

8.12 OIMS 8-1: Third-Party Services

OIMS 8-1 provides a systematic approach for the selection of contractors and subsequent management of interfaces between Esso and contractors to ensure work is performed in a safe, secure, and environmentally sound

manner. This System applies to all service contractors (including marine operations, wireline and workover operations, crane services, provision of lifting equipment and aviation services) and suppliers of critical equipment (such as valves, seals, gaskets, lifting equipment and cranes).

8.12.1 Contractor selection and management

Esso's contractor selection and management processes support two different phases of a contract life cycle:

- the first phase includes requisitioning for contractor services, pre-qualifying contractors, selecting the contractor, and conducting pre-mobilisation activities associated with subsequent contractor interface management
- the second phase occurs during contract work execution and involves ongoing interface management between Esso and the contractor, as well as monitoring and stewardship activities to confirm that the contractor is meeting the OI requirements of the agreement.

The pre-qualification process includes review of recent contractor performance results, reviews of contractor SSHE programs, and site visits to the contractor's facilities to validate reported performance results and evaluate a contractor's capability for effective work execution. Esso's SSHE Group participates in the pre-qualification screening and bid evaluation process including contractor site assessments, as required. OIMS System 8-1 specifies that all contractors conducting activities with potential high SSHE impact must submit a SSHE execution plan or a bridging document for the scope of work. High SSHE impacts are activities which, if poorly executed, could cause significant safety or environmental impacts. These may include aviation, construction, well work, subsea activities and vessels.

The contractor's SSHE execution plan is required to address:

- communication of SSHE expectations and requirements to contractor crews and subcontractors
- compliance with relevant regulatory obligations (including EMPs, Safety Cases, relevant laws and regulations)
- reporting of leading and lagging indicators
- incident investigation and management processes
- other specific requirements as dictated by the scope of the assignment or local site characteristics.

8.12.2 JUR Environmental Management System

The JUR that will be used to conduct the activities within this EP is the *Valaris J-107*, operated by Valaris. JUR operations will be conducted in accordance with the JU-107 operating procedures. These are complemented by the *J-107 Safety Case* (Valaris, 2021).

The Safety Case outlines:

- management system description
- Valaris business policies
- Valaris master training matrix
- Valaris risk assessment matrix
- facility description:
- medical equipment and pharmaceuticals
- safety critical element codes and standards
- risk management
- hazard register
- bow tie diagrams
- summary of operational boundaries matrix
- recommendations register
- emergency response
- performance monitoring.

In addition to these policies and procedures, there will also be operations/location specific working practices which will be incorporated into the operation of the JUR by project specific HSE Management System bridging documents, developed where required.

8.12.3 Contractor performance monitoring

Esso develops performance monitoring plans for third parties prior to a contractor mobilising to a work site location.

The Contract Administrator is engaged in the contract life cycle management and the SSHE Group assists in the assessment and monitoring of contractor performance, as required. Providers of OIMS-critical services such as aviation, vessels, construction and well work are subject to a quarterly performance review and annual performance assessment.

Performance reporting consists of documented reports and verbal communications appropriate to the impacts and risks involved with the services provided. Written reports can include:

- non-conformance reports
- SSHE performance statistics, including environmental incidents
- assessments on the adequacy of actions taken from performance gaps/incidents
- deficiencies with SSHE requirements and recommended corrective actions
- review of contractor SSHE inspections and findings.

Report findings and recommendations are reviewed with contractor management and follow-up actions implemented to address deficiencies.

8.13 OIMS 9-1: Incident Management

OIMS 9-1 requires management of SSHE incidents including initial response and notifications, investigation and analysis, documentation, communication of lessons learned, corrective actions management and the analysis of trends. In the context of this System, incidents (including near misses) are related to:

- personnel safety
- process safety
- security
- occupational health
- regulatory compliance
- environmental
- equipment reliability (with SSHE consequences).

System 9-1 requires that:

- the incident is reported in the IMPACT database
- an investigation occurs, if triggered by an evaluation of actual or potential incident severity, and
- the incident is correctly documented, lessons learned are communicated, and corrective actions are followed up and tracked in the IMPACT database.

Esso utilises the IMPACT incident database as the single, centralised tool for capturing data, tracking, sharing and analysing incidents, assessment findings, lessons learned and follow-up actions.

8.13.1 Management of non-conformance

Investigations into environmental incidents, including EP non-compliances, are conducted in accordance with the Esso incident management system required by OIMS 9-1.

Notification, reporting and investigation of incidents achieves the following:

- ensures management, regulatory authorities and other appropriate personnel are notified of incidents and near misses on a timely basis
- enables sharing of learnings throughout the organisation to continuously improve SSHE systems
- identifies corrective actions to prevent re-occurrence including (if applicable) actions to re-establish the stated control measures, as outlined in this EP, in order to continue to reduce impacts and risks to ALARP and an acceptable level; and
- enables the analysis and trending of incident data to ensure appropriate focus on emerging issues.

Incidents are managed in accordance with the *Incident Management Guideline* (AUGO-PO-IMG-015) which describes the responsibilities and processes for all stages of incident management. Esso utilises the IMPACT incident database as the single, centralised tool for capturing data: tracking, sharing and analysing incidents, assessment findings, lessons learned and follow-up actions.

All Esso personnel are responsible for notifying their immediate supervisor of incidents, near misses and identified hazards, and for taking appropriate responses as part of their regular duties. Accountability for investigation lies with business line management. The SSHE Group is responsible for maintaining the reporting system, subject matter expert advice and investigation support.

The triggers and expected deliverables for investigations are based on incident severity (actual and potential) and are documented in Appendix 1 of the Incident Management Guideline, Incident Investigation and Sharing Guideline. The triggers for an investigation into an environmental incident are a significant spill to the environment, community complaint or regulatory reportable incident (see Table 8-9).

Corrective actions that address the root cause(s) of the incident are identified and implemented to prevent the recurrence of similar incidents. Corrective actions can be improvements to facilities, programs, processes or procedures that are identified to reduce the impact or risk, and enhance the integrity of operations. Once corrective actions have been identified from incident reports (including audit and inspection reports), the implementation process is managed to completion via IMPACT. This ensures results are achieved and that the improvement is documented and sustained.

8.13.2 Incident notification and reporting

The OPGGS (Environment) Regulations define ‘recordable incidents’ and ‘reportable incidents’, and also describe reporting requirements for each type of incident.

The requirements for reporting environmental incidents to external agencies are listed in Table 8-9. These will be reported to the regulator by the Esso Wells Operations Supervisor (or SSHE Group delegate).

The OPGGS (Environment) Regulations define ‘recordable incidents’ and ‘reportable incidents’, and also describe reporting requirements for each type of incident.

Table 8-9 External incident notification and reporting requirements

Requirement	Timing	Contact
Recordable incidents		
<p>Recordable incident, for an activity, means a breach of an EPO or EPS, in the EP that applies to the activity that is not a reportable incident.</p> <p>As a minimum, the written monthly recordable incident report must include a description of:</p> <ul style="list-style-type: none"> • all recordable incidents which occurred during the calendar month • all material facts and circumstances concerning the incidents that the titleholder knows or is able, by reasonable search or enquiry, to find out • any action taken to avoid or mitigate any adverse environmental impacts of the recordable incidents • the action that has been taken, or is proposed to be taken, to prevent a 	<p>As soon as possible but before the 15th day of the following calendar month.</p>	<p>NOPSEMA – submissions@nopsema.gov.au</p> <p>and copy JV partner, Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com.au</p>

Requirement	Timing	Contact
<p>similar incident occurring in the future.</p> <p>Monthly reports will utilise the <i>Recordable Environmental Incident Monthly Report</i> form (NOPSEMA, 2020). If there are no recordable incidents a 'nil' report will be submitted.</p>		
Reportable incidents		
<p>Reportable incidents are those that have caused, or have the potential to cause, moderate to significant environmental damage. This includes, but is not limited to, those identified through the risk assessment process as having a consequence ranking of I or II, or at a minimum the following incidents:</p> <ul style="list-style-type: none"> unplanned release of hydrocarbon liquid or chemicals exceeding 80 L into the marine environment caused by, or suspected to have been caused by, petroleum activities unplanned injury or death of a cetacean or listed threatened/migratory/marine species caused by, or suspected to have been caused by, petroleum activities. <p>The notification must contain:</p> <ul style="list-style-type: none"> all material facts and circumstances concerning the reportable incident that the titleholder knows or is able, by reasonable search or enquiry, to find out any action taken to avoid or mitigate the adverse environmental impact of the reportable incident the corrective action that has been taken or is proposed to be taken to stop, control or remedy the reportable incident. 	<p>Verbally as soon as possible but within 2 hours of incident, or, if the reportable incident was not detected by the titleholder at the time of the first occurrence – the time the titleholder becomes aware of the reportable incident, then.</p> <p>Written notification as soon as practicable (copy to National Offshore Petroleum Titles Authority and Department of Jobs, Skills, Industry and Regions (DJSI)).</p> <p>Written report as soon as practicable but within 3 days including specifying if a further written report will be provided (then copy to National Offshore Petroleum Titles Authority and DJSI within 7 days).</p> <p>If formal investigation is triggered, a further written report within 30 days.</p>	<p>NOPSEMA – 1300 674 472</p> <p>DEECA – Earth Resources Regulation Compliance Duty Officer - 0419 597 010 (24-hour)</p> <p>NOPSEMA-Submissions@nopsma.gov.au</p> <p>DTP- marine.pollution@transport.vic.gov.au</p> <p>State Duty Officer: 0409 858 715</p> <p>NOPTA – reporting@nopta.gov.au</p> <p>JV partner, Woodside energy (Bass Strait) Pty Ltd – bass.strait@woodside.com</p>
Other reporting requirements		
<p>Mandatory MARPOL report about a pollution incident involving:</p> <ul style="list-style-type: none"> a discharge (or probable discharge) of oil or noxious liquid substances in excess of permitted MARPOL discharge levels, quantities or rates, 	<p>Vessel Master to notify AMSA verbally without delay. If AMSA asks for a written MARPOL report this must be provided within 24 hours after AMSA asks for the report.</p>	<p>AMSA +61 02 6230 6811 or 1800 641 792 rccaus@amsa.gov.au</p>

Requirement	Timing	Contact
<p>for whatever reason, including those for the purpose of securing the safety of the ship or for saving life at sea</p> <ul style="list-style-type: none"> • a discharge (or probable discharge) of harmful substances in packaged form, including those in freight containers, portable tanks, road and rail vehicles and shipborne barges. • Report to include: • name of ship/s involved • time, type and location of incident • quantity and type of harmful substance • assistance and salvage measures • any other relevant information. 		
<p>Suspected or known IMS introduction</p>	<p>Immediately</p>	<p>Report a pest – https://www.marinepests.gov.au/</p> <p>DEECA – 136 186</p> <p>Env Advisor to notify JV partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com</p>
<p>Oiled wildlife</p>	<p>Immediately</p>	<p>DEECA</p> <p>State Agency Commander – 1300 134 444 (24hrs)</p> <p>Env Advisor to notify JV partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com</p>
<p>Wildlife emergency</p>	<p>Immediately</p>	<p>DEECA</p> <p>Whale and Dolphin Emergency Hotline – 1300 136 017</p> <p>Seals, Penguins or Marine Turtles 136 186 (Mon-Fri 8am to 6pm)</p> <p>Marine Response Unit – 1300 245 678</p> <p>Env Advisor to notify JV partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com</p>

Requirement	Timing	Contact
Notification of activities affecting listed species or ecological communities in or on a Commonwealth area (specifically unintentional injury or death of a cetacean or listed threatened/migratory/marine species caused by, or suspected to have been caused by petroleum activity)	Within 7 days	DCCEEW- Environmental Compliance Hotline: 1800 110 395 environment.compliance@dcceew.gov.au Copy to JV partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com)
Cetacean vessel strike	Within 3 days	DCCEEW- Hotline: 1800 920 528 EPBC.Permits@dcceew.gov.au Env Advisor to notify JV partner Woodside Energy (Bass Strait Pty Ltd – bass.strait@woodside.com)

8.14 OIMS 10-1: Community Awareness and Public Affairs

In accordance with OIMS 10-1, Esso has developed a consultation and engagement methodology that enables Esso to:

- ensure every effort is made to identify relevant persons
- undertake a verification process to ensure all representatives of relevant persons are a true representation/advocate of the views of their constituents and can be relied upon to faithfully communicate the results of engagements back to their constituents
- ensure relevant persons, especially those who are directly impacted, are consulted on matters that may affect them
- develop and maintain consistent and constructive relationships with relevant persons with a genuine desire to further understand potential environmental, social and economic impacts
- pursue engagement with relevant persons using a level of effort commensurate with the nature and scale of the activity
- keep relevant persons informed with respect to their specific interests, functions or activities
- encourage relevant persons to assess the information provided to them and respond to Esso with any feedback including questions, issues, concerns, suggestions, objections and/or claims
- maintain confidence of relevant persons in Esso and its activities through ongoing open, informative, inclusive and timely communications, wherever possible.

Implementation of the methodology provides a mechanism by which Esso can:

- meet regulatory obligations and aligning to industry best practice consultation and engagement methods
- review and update the consultation methodology to reflect any changes to applicable laws, best practices or standards
- provide meaningful information in a format and language that is readily understandable and tailored to the needs of relevant persons and groups
- provide information within an adequate timeframe to inform decision-making
- ensure consultations are based on open communication that is transparent, collaborative, inclusive and are conducted with integrity to foster respect and trust

- disseminate information in formats, methods and locations that make it easy for relevant persons to access
- respect local traditions and the relevant person's preferred ways of doing things
- establish two-way dialogue that gives all relevant persons the opportunity to exchange views and information, to listen, and to have their feedback heard and addressed
- seek inclusiveness in representation of views, including minority and special interest groups
- develop clear mechanisms for receiving, documenting, and responding to feedback
- incorporate feedback from relevant persons into the program design and providing clear and transparent reporting back to relevant persons in a reasonable timeframe.

Esso recognises First Nations people as the Traditional Custodians of the land and waters in which the company operates and acknowledges and pays respect to their Elders – past, present and emerging.

Esso understands that First Nations people see no distinction between the land and the sea, considering it all as a part of their Country.

Esso continues to identify and attempt consultations with environmentally focused non-government organisations (eNGOs) and other environmental protection and advocacy groups.

Esso is committed to undertaking all consultation and engagement activities in accordance with ExxonMobil standards and applicable Australian legislation as outlined in Section 1.3 of this EP.

8.15 OIMS 10-2: Emergency Preparedness and Response

The process to prepare emergency preparedness and response plans, including procedures to prevent and mitigate potential environmental impacts associated with accidents and emergency situations, is addressed through OIMS 10-2.

Emergency response planning and preparedness is essential to ensure that, in the event of an incident, all necessary actions are taken for the protection of the public, the environment, company personnel, assets and reputation.

Responsibilities for the purposes of emergency response are outlined as follows:

- Valaris is the 'Operator' of the facility and has legislative responsibilities for all operations on the JUR, including response to emergencies
- Esso's role in dealing with emergencies is to provide the necessary resources to support the Operator's emergency response. Esso can provide support locally, regionally and internationally.

Esso implements incident management based on the ICS. The ICS is a system designed to provide a consistent organisation to respond to emergency situations. Positions within the ICS are fixed and have specific functions, ensuring that all responders know what to do and where they report in the organisation structure. The ICS is based on the US National Incident Management System 2006 ICS Structure, with slight modifications for industry. ICS is the primary emergency response framework for an oil spill response from all offshore activities.

A campaign specific bridging Emergency Response Plan (ERP) will be developed to support the existing JUR emergency response documentation. It will describe the location specific arrangements for responding to emergencies including the role of helicopter and vessel support functions, extreme weather evacuation planning, medivac, regulatory liaison and reporting.

The bridging ERP will address local responses for Esso Bass Strait operations including appropriate support linkages to Esso's Australian and corporate-wide emergency preparedness and response network including in-country, regional and global ESGs. The bridging ERP also details how Valaris and Esso will interact in the event of an emergency. A campaign specific Contacts Directory listing all contact numbers will also be developed.

8.15.1 Oil Pollution Emergency Plan

In accordance with OPGGS (Environment) Regulation 22(8) and 22(12), the implementation strategy must include an OPEP and arrangements for testing the response arrangements within this EP.

In all cases Esso, as titleholder under the OPGGS (Environment) Regulations, will retain control and responsibility for managing spill response.

Esso has in place the Oil Pollution Emergency Plan (AUGO-EV-ELI-001), referred to as the Bass Strait OPEP, for all its offshore assets and operations in Bass Strait that outlines how Level 1, 2 and 3 spills will be managed. The Bass Strait OPEP is provided as Attachment 2 Appendix A. In addition, Quick Reference Information specific to the activities of this EP, is included as [Appendix D in the OPEP](#). The Quick Reference Information summarises hydrocarbon properties, worst case deterministic modelling, receptors at risk, relevant shoreline Tactical Response Plans, and recommended spill response strategies.

Level 1 spills are defined in the Bass Strait OPEP as 'Located within a 3 nautical mile radius of the spill location'. The Operator has the responsibility to respond to emergencies. Therefore, for a Level 1 spill which is contained inside the 500 m PSZ the JUR ERP is the primary response plan and the Operator will use its shipboard resources to immediately respond.

As described above, as Esso is the titleholder under the OPGGS (Environment) Regulations, it will support the Operator with the Bass Strait OPEP and provide additional resourcing as needed. All actions described under Level 1 incidents in the Bass Strait OPEP will still be undertaken by Esso who will work with the Operator throughout the response process per the campaign specific bridging ERP. Where the spill extends beyond the 500 m PSZ, Esso will continue with the response.

For a Level 2 or 3 spill the Bass Strait OPEP is the primary document and outlines the resources and response strategies to be implemented depending on the size and nature of the spill.

8.15.2 Oil spill response needs and capability

In order to determine appropriate oil spill response strategies and capabilities, Esso has assessed spill risk, fate and weathering in the process of developing this EP. Deterministic modelling was utilised to identify potentially impacted receptors and anticipated oil loadings. Where modelling indicates surface or shoreline exposure above moderate thresholds, i.e. actionable quantities of oil, an assessment has been carried out to determine resource needs and availability..

MDO is a Group II oil that has a low viscosity and spreads rapidly on the sea surface to form thin sheens. Due to the rapid spread and weathering of MDO in open water environments, on-water containment and recovery may be viable but are unlikely to be effective. The use of chemical dispersants is not recommended practice for MDO. The probability of shoreline contact at the moderate threshold from an MDO spill within the ADE is predicted to be 2% (see Section 7.6.2.3).

The West Kingfish and Halibut crude oils used as the analogues for Whiptail-1A and Mulloway-1 respectively, are Group IV persistent oils according to the International Tanker Owners Pollutions Federation classifications. The results for the spill modelling are presented in Section 7.7.1 and predict that the shoreline oiling is likely in the event of a LOWC. Given the properties of the oils and predicted weathering and fate, based on the Net Environmental Benefit Analysis for the spill, the recommended response strategies will include a combination of spill response techniques that are outlined in the Bass Strait OPEP (Attachment 2, Appendix A).

8.15.3 Testing of oil spill response arrangements

In accordance with OPGGS (Environment) Regulation 22(14) and requirements of OIMS System 10-2: Emergency Preparedness and Response, the response arrangements within the Bass Strait OPEP will be tested:

- prior to the commencement of the activity
- when they are significantly amended
- not later than 12 months after the most recent test
- in accordance with the:
 - schedule outlined in the Bass Strait Operations EP (AUGO-EV-EMM-002) [Volume 4 Table 9-1]
 - EP-specific schedule outlined in Table 8-10
 - annual Emergency Preparedness and Response Activity Plan.

The annual Emergency Preparedness and Response Activity Plan includes additional detail on the type of test, frequency, duration, and participants and is cross-referenced to preparedness and response performance standards which are to be tested, as detailed in the annual Emergency Preparedness and Response Plan, provided as Attachment 2.

Testing may be externally or internally facilitated. Tests will be documented, assessed against objectives and applicable performance standards and any corrective actions/recommendations arising from the tests will be managed in accordance with the Emergency Preparedness and Response Programs Guide (AUGO-PO-SRT-337). Emergency response training records will be maintained in accordance with OIMS System 10-2.

Where changes are required to the Bass Strait OPEP, resulting from testing/exercise outcomes, altered contractual arrangements, corrective actions, routine information updates (e.g. contact detail change), or other items; the OIMS 10-2 Administrator is responsible for ensuring changes are assessed against OPGGS (Environment) Regulation 39 revision criteria and where necessary, this EP and/or the Bass Strait OPEP is submitted to NOPSEMA as a formal revision, in accordance with the MOC process (OIMS 7-1). For changes which do not trigger a formal revision, internal revisions to the Bass Strait OPEP will also be in accordance with the MOC process with any change justified.

Table 8-10 Testing of oil spill response arrangements

Test	Objective	Parties involved	Scheduled frequency
Relief well	To assess the availability of suitable drill rigs capable of meeting the timelines defined in the Australian Wells Tier II/III Emergency Response Plan which includes source control emergency preparedness (in total well completed in 98 days) for relief well drilling.	Wells team Third-party service providers Rig operator	Status and location of suitable relief well rigs are confirmed 30 days prior to P&A activities commencing on first well and subsequently each month throughout the campaign.
Desk top exercise - Source control	To familiarise the Offshore IMT and SCB with their roles and responsibilities detailed in the Bass Strait OPEP and Australian Wells Tier II/III Emergency Response Plan. To validate contact information and resource activation protocols as detailed in the Bass Strait OPEP and Australian Wells Tier II/III Emergency Response Plan to assess the availability of logistical resources to mobilise the following; <ul style="list-style-type: none"> the specific aspect of the logistical resources to be assessed will be the availability of suitable construction support vessels. to notionally test identifying and mobilising a relief rig to drill a relief well as outlined in the Australian Wells Tier II/III Emergency Response Plan. 		Shortly after arrival of the JUR and before start of P&A activities.

8.16 OIMS 11-1: OIMS Assessment

Formal assessment is regularly undertaken on the performance of the OIMS to ensure that the Systems continue to be suitable, effective and are continuously improved. This is undertaken, at a minimum, on an annual basis in accordance with OIMS System 1-1.

9 Bibliography

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Appendix A: Description of the Environment in the EMBA

Appendix A JUR P&A EP

Description of the Environment



ExxonMobil.

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1 Description of the Environment

In accordance with OPGGS Regulation 15(2), the 'environment that may be affected' (EMBA) by the activity is described in this section, together with its values and sensitivities. The definition of the EMBA is within section 3.2 of the EP. The EMBA is shown in Figure 1-1.

The following explanation has been inserted on all the figures displaying the EMBA throughout this Appendix:

"The environment that may be affected (EMBA) illustrated in this map represents the combined modelling results of 100 individual hydrocarbon spill simulations from a loss of well containment (LoWC) at Whiptail-1 (using West Kingfish crude as the analogue) and 100 individual hydrocarbon spill simulations from a LoWC at Mulloway-1 (using Halibut crude as the analogue). The Whiptail-1 spill simulates the release of 61,544 m³ and the Mulloway-1 spill simulates the release of 22,747 m³, both over 98 days, using annualised metocean conditions. Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill could occur at any time. The EMBA is not representative of a single spill; an individual spill would affect a significantly smaller area. The modelled EMBA is based on the lowest reportable hydrocarbon thresholds."

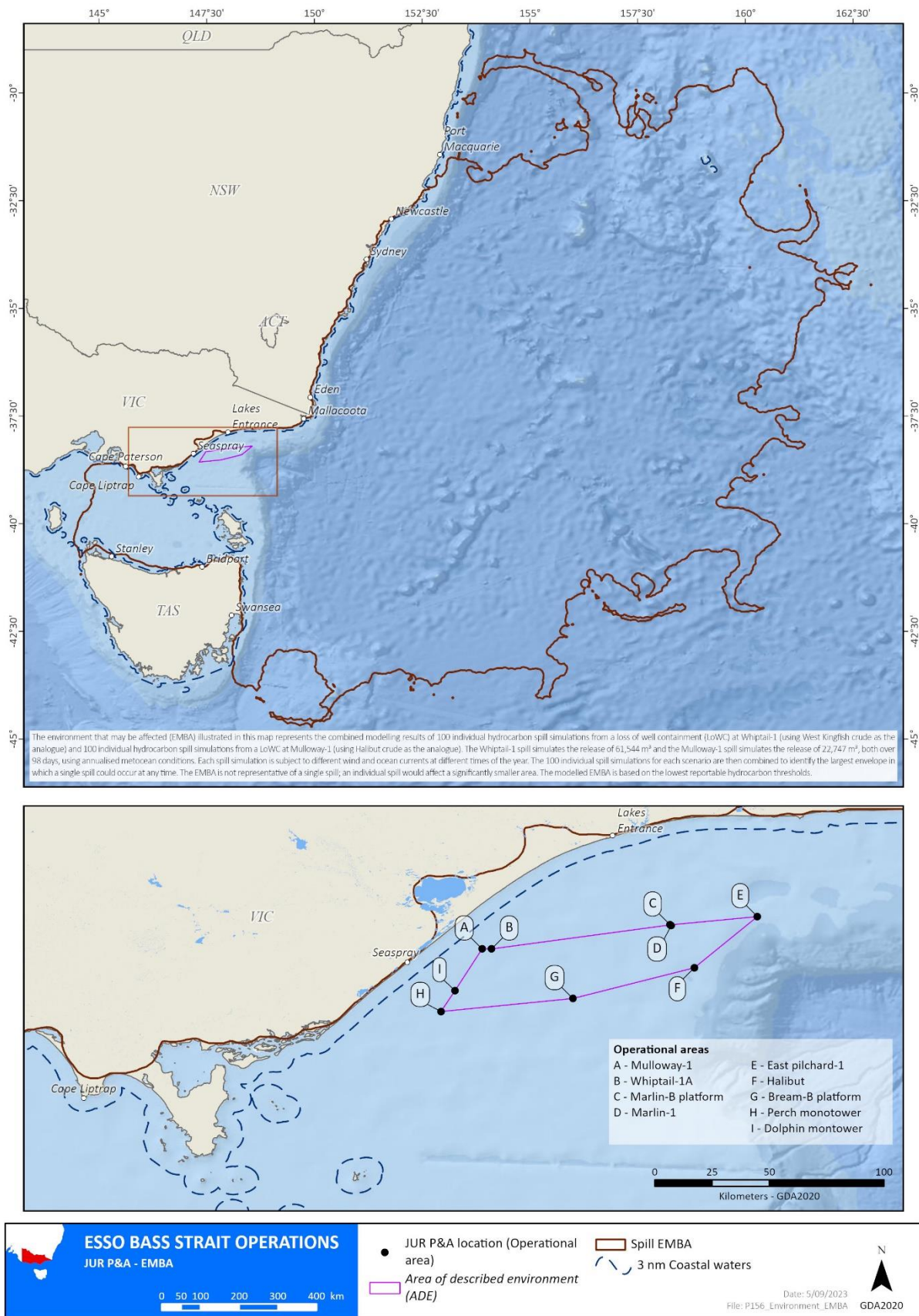


Figure 1-1 JUR P&A EMBA

1.1 Conservation Values and Sensitivities

The conservation values and sensitivities found within EMBA are described within this section.

1.1.1 World Heritage

World heritage is defined in Table 3-2 of the EP. World heritage sites within the EMBA are described below and shown in Figure 1-2. The Sydney Opera house is not described as it is located onshore (i.e., it does not have marine features that are present in the EMBA).

1.1.1.1 Lord Howe Island Group

The Lord Howe Island Group is located 700 km north-east of Sydney and covers an area of 1,463 km², 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, 2022a).

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, 2022a).

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, 2022a). 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 (DECCW, 2007). Lord Howe Island Group is within the Lord Howe Marine Park.



Figure 1-2 World Heritage-listed properties within the EMBA

1.1.2 National Heritage

National heritage is defined in Table 3-2 of the EP. National heritage sites within the EMBA are described below and shown in Figure 1-3.

1.1.2.1 Bondi Beach

Bondi Beach was inscribed on the National Heritage List in 2008. Bondi Beach is one of the most famous beaches in the world. Framed within rocky headlands it has come to be seen both nationally and internationally as part of the Australian way of life and leisure. In 1907 the Bondi Surf Bathers' Life Saving Club was formed, which acted as a catalyst for surf lifesaving movement throughout Australia (DCCEEW, 2023a).

1.1.2.2 Lord Howe Island Group

The Lord Howe Island Group was one of 15 World Heritage places included in the National Heritage List on 21 May 2007, see section 1.1.1 for the description.

1.1.2.3 Kamay Botany Bay: botanical collection sites

The Kamay Botany Bay: botanical collection sites were added to the National Heritage List in 2017. Botanist Sir Joseph Banks and naturalist Dr Daniel Solander accompanied Captain James Cook on the 1770 voyage to Australia. Upon the first landing, plants collected by Banks and Solander included many iconic Australian plant species, including some that later had important scientific and research value. Banks and Solander collected specimens of at least 132 plant species, including iconic members of the Proteaceae family (Banksia) and Myrtaceae family (Eucalyptus, Melaleuca and Leptospermum) (DCCEEW, 2022b).

The plant collection sites at Kamay Botany Bay, together with the collected plant material, represent the symbolic and actual integration of Australian flora into western science. The place is broadly comprised of three areas: the Kurnell Peninsula and La Perouse Headland which are located within Kamay Botany Bay National Park and the Towra Point Nature Reserve (DCCEEW, 2022b).

1.1.2.4 Kurnell Peninsula Headland

The Kurnell Peninsula Headland was added to the National Heritage List in 2005. The Kurnell Peninsula Headland was the landing site of Captain James Cook which led to the British settlement of the Australian continent. It altered forever the way of life for Indigenous Australians, dramatically expanded the world's scientific understanding of the continent's unique flora and fauna and ultimately led to the creation of a new nation – Australia. The site also represents the first recorded contact between Indigenous people and Britain in eastern Australia representing the birthplace of a nation and the dispossession of Indigenous people (DCCEEW, 2022c).

1.1.2.5 North Head – Sydney

North Head, Sydney was added to the National Heritage List in 2006. North Head is recognised as the entrance to one of the world's most picturesque harbours. The northern seaward entrance to Port Jackson, more commonly known as Sydney Harbour, is important as it played a major role in the cultural and military life of the colony of NSW, 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. In particular, the Manly headland marks the site where ships carrying passengers with infectious diseases were isolated; an important means of defence for an island nation (DCCEEW, 2022d).

1.1.2.6 Royal National Park and Garawarra State Conservation Area

The Royal National Park and Garawarra State Conservation Area was added to the National Heritage List in 2006. Royal National Park was Australia's first national park, and the world's second official national park after Yellowstone National Park in the USA. Located on the southern edge of Sydney, Royal National Park and the adjacent Garawarra State Conservation Area have one of the richest concentrations of plant species in temperate Australia. Royal National Parks is a landscape of sparkling beaches, cliffs, wild heathlands and woodlands. Its rich concentration of more than 1000 plant species supports a wide array of birds, reptiles and butterflies (DCCEEW, 2022e).

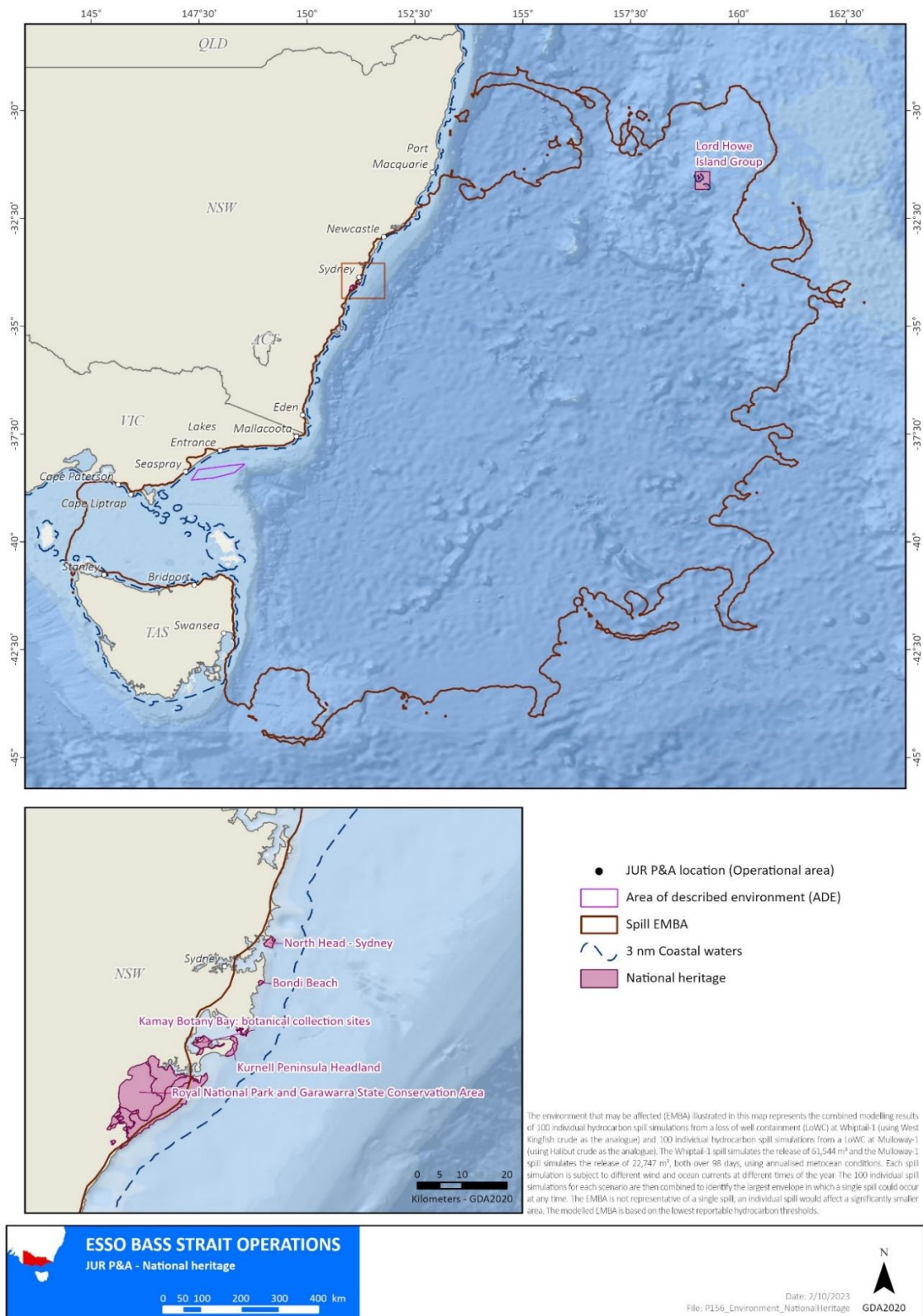


Figure 1-3 National Heritage Listed sites within the EMBA

1.1.3 Commonwealth Heritage

Commonwealth heritage is defined in Table 3-1 of the EP. The following Commonwealth Heritage Listed sites are within the EMBA.

- Natural heritage:
 - Malabar Headland – located just north of Botany Bay, NSW contains two significant bushland remnants referred to as the coastal section and the western section. Together, these contain what is probably the largest area 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 two sections support at least seven distinct plant communities. This diversity of habitats is only matched in the Eastern Suburbs in Botany Bay National Park (DCCEEW, 2023b).
 - The Beecroft Peninsula - The Beecroft Peninsula is the best example of a Permian cliffed coast in NSW. It is about 4040 ha located south of the town of Currarong. 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 NSW. This floristically rich vegetation provides important habitat for a variety of bird species, including the vulnerable ground parrot.
- Historic heritage:
 - The majority of listings on the Commonwealth Heritage List under the historic classification which occur in the EMBA are lighthouses; these and the other listings are not considered relevant due to their lack of marine/coastal features.
- Indigenous heritage:
 - Crocodile Head Area – the Australian heritage database does not have a description for this site. Although its location is noted as approximately 20 ha, located on Beecroft Peninsular near Crocodile Head.
 - Currarong Rockshelters Area – The Currarong Rockshelters Area is situated at the northern end of the Beecroft Peninsula. Four rock shelters with midden deposits are located in a small gully on both sides of Blacks Cave Creek. The three shelters on the south side were excavated in 1967-68, and two of these were re-excavated 1972. Evidence suggested that the Currarong Rockshelters were first occupied around 7,000 years ago. These sites provide evidence of technological changes within what is known as the small tool industry, the stone artefact industry which characterised the last 5,000 years. The three shelters exhibited similar faunal assemblages. Resources from all of the available environments were exploited, the ocean beach, the estuary and the forested hinterland. These included a variety of shellfish, mostly rocky shore, and estuarine species together with a few sandy shore species. Reef fish were caught by hook and line and estuarine fish were speared in the shallows. Stranded whales, seals and sea birds were scavenged. Land mammals such as kangaroo, wallaby, bandicoot and possum were hunted in the adjacent woodland (DCCEEW, 2023c).
 - Jervis Bay Territory - The Jervis Bay Territory is composed of Bherwerre Peninsula, Bowen Island, and the part of Jervis Bay from Captains Point to Bowen Island. The coast of Bherwerre Peninsula includes high sea cliffs, sea caves, intertidal rock platforms, beaches, and sublittoral rocky reefs. Aboriginal people used Bherwerre long before rising sea levels at the end of the last Ice Age turned this area of land into a peninsula. Evidence from the nearby Burrill Lake demonstrates that Aboriginal occupation extends back at least 20,000 years. The rise of sea levels at the end of the last Ice Age created a diversity of habitats on the Bherwerre Peninsula and the surrounding marine environment. This diversity of habitats and resources attracted Aboriginal people to the area and provided them with sustenance (DCCEEW, 2023d).

1.1.4 Wetlands of International Importance

Wetlands of international importance (Ramsar wetlands) are defined in Table 3-2 of the EP. Ramsar sites within the EMBA are described below and shown in Figure 1-4.

1.1.4.1 Gippsland Lakes

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

The Gippsland Lakes Ramsar Site, located in Victoria is a series of large, shallow, coastal lagoons approximately 70km in length and 10km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364 km² and the three main water bodies are Lake Wellington, Lake Victoria, and Lake King.

The site meets five of the Ramsar criteria: 1, 2, 4, 6 and 8.

The Gippsland Lakes is a good representation of a natural or near-natural wetland, characteristic of the biogeographical region. It forms one of the largest coastal lagoon systems in the Drainage Division and contains a distinctive landscape of wetlands and flat coastal plains. The site supports a broad range of wetland types in close proximity to each other, including periodically and permanently inundated palustrine marshes, both shallow and deep lake features, lagoons with narrow inlets, and broad embayment's.

The Ramsar site supports several nationally threatened wetland fauna species at various stages of their life cycle including two nationally threatened frog species (green and golden bell frogs and growling grass frogs), the Australian painted snipe, the Australian grayling as well as three nationally threatened wetland-associated flora species the dwarf kerrawang, swamp everlasting and metallic sun-orchid. The site supports habitat and conditions that are important for critical life cycle stages of a variety of wetland-dependent fauna species.

The permanence of the main lakes and the relatively regular flooding of the adjacent wetlands mean that this wetland is an important drought refuge for many water birds and other aquatic species, including as permanent refuges and breeding sites for two threatened frog species. The Gippsland Lakes have been identified as being of outstanding importance for waterbirds, regularly supporting more than 20,000 waterfowl. Waterbird species which are considered to have met the one per cent population threshold are: red-necked stint, black swan, sharp-tailed sandpiper, chestnut teal, musk duck, fairy tern and little tern.

Gippsland Lakes provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species of that are directly and indirectly significant for commercial fisheries. 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.

1.1.4.2 Corner Inlet

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

Corner Inlet is a 67,168 ha wetland enclosed by barrier islands located on the southeast coast of Victoria, north of Wilsons Promontory. The inlet contains the most extensive intertidal mudflats in Victoria.

The site meets six of the Ramsar criteria: 1, 2, 4, 5, 6 and 8.

The area contains the only extensive bed of broad-leafed seagrass in Victoria. The islands of Corner Inlet, although not rich in plant diversity, are of high biogeographical significance due to their geological history and connectivity to the mainland during ice ages. The islands also contain significant areas of saltmarsh and mangroves, both of which are communities of very limited distribution. These communities filter pollutants, stabilize sediments and protect the shoreline from erosion.

Corner Inlet provides breeding habitat for a variety of waterbirds, including several species listed as threatened at the state level and/or occurring in significant numbers and habitat for significant aggregations of waterbirds during post-breeding, and as a refuge during adverse environmental conditions. Corner Inlet regularly supports well over 20,000 waterbirds including species such as the eastern curlew, curlew sandpiper, bar-tailed godwit, and double-banded plover. The Corner Inlet Ramsar Site has regularly supported more than one per cent of the population of the pied oystercatcher, sooty oystercatcher, pacific gull, fairy tern, red knot, red necked stint and chestnut teal. Corner Inlet also supports the nationally critically endangered orange bellied parrot as well as several other threatened species, including the growling grass frog and Australian grayling. The southern right whale, leatherback turtle, swift parrot and shy albatross have all also been recorded at the site.

The Ramsar site provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species. Including King George whiting, Australian salmon, greenback flounder, southern garfish, leatherjackets, short-finned eel and gummy shark.

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 site is used for biological conservation, ports with servicing facilities for offshore oil and 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.

1.1.4.3 East Coast Cape Barren Islands Lagoons

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

East Coast Cape Barren Island Lagoons is located on the east coast of Cape Barren Island in Tasmania. The site is significant as it forms a representative sample of coastal lagoons in the Flinders Biogeographic Region and is relatively undisturbed.

The site meets two of the Ramsar Criteria: 1 and 3.

The Cape Barren Dunes, within the site, are a geoconservation site in Tasmania. Thirsty Lagoon is a hypersaline lagoon and is a Tasmanian estuary of critical conservation significance. Three of the lagoons within the site, Flyover Lagoon 1, Flyover Lagoon 2, and Little Thirsty Lagoon, have been assessed as near pristine wetlands for Tasmania, and are recognised Nationally Important Wetlands.

The critical components and processes for the site at the time of listing in 1982 have been determined to be geomorphology, hydrology and vegetation types. While there is some anecdotal evidence that this site is important for shorebirds, there is insufficient data to evaluate whether they are a critical component.

The Ramsar site is an important habitat for a number of plant species and vegetation communities. Thirteen threatened species listed in Tasmania occur on the site, including the furze hakea and horny cone bush. The site represents the only known reserve in Tasmania for the threatened pink bladderwort. The white-bellied sea eagle, and the ruddy turnstone also occur within the site.

This Ramsar site 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.

1.1.4.4 Logan Lagoon

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

The Logan Lagoon Ramsar site is enclosed within the Logan Lagoon Conservation Area located on the south-east corner of Flinders Island, Tasmania. The site is an excellent, regionally representative example of a coastal estuarine wetland system.

The site meets five of the Ramsar Criteria: 1, 2, 3, 4 and 6.

The Ramsar site contains two sites listed on the Tasmanian Geoconservation Database; Logan Lagoon Holocene Shorelines and Planter Beach Coastal Barrier System. Logan Lagoon, with other lagoons and dunes in the area, represents an outstanding example of the development of Holocene shorelines for the local region. Logan Lagoon is recognised as a wetland in near pristine condition. The Planter Beach Coastal Barrier System, partly within the site, represents an outstanding example of how offshore bars formed with Holocene sea level rise and barrier growth has enclosed the coast, forming large lagoons.

The nationally threatened northern leek orchid and a subspecies of the Common wombat (Bass Strait) also occurs on the site and is restricted to Flinders Island. Logan Lagoon supports species and communities threatened in the Tasmania Drainage Division, particularly callitris rhomboidea forest and the rayless starwort. The site provides breeding habitat for two beach nesting shorebirds that are threatened, the fairy tern and Little tern.

The Ramsar site is an important area for birds migrating between south-eastern Australia and Tasmania. Supporting five migratory bird species, the red-necked stint, curlew sandpiper, sharp-tailed sandpiper, common greenshank, and little tern. The site also regularly supports one percent of the global or regional populations of the: hooded plover, fairy tern, musk duck, and chestnut teal.

1.1.4.5 Towra Point Nature Reserve

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

Towra Point Nature Reserve Ramsar site is located on the southern shore of Botany Bay NSW, within Towra Point Nature Reserve. Towra Point is important in providing ecological connectivity for itinerant species and is important for maintaining biodiversity in the greater Sydney region.

The site meets four of the Ramsar criteria: 2, 3, 4 & 8.

Towra Point is a critical roosting and feeding habitat for large numbers of migratory shorebird species and a significant nesting site for the little tern. The mangroves and seagrass provide protection and food for juvenile fish species. Studies have shown that a higher abundance and diversity of fish species are found in areas of mangrove and saltmarsh which are adjacent to seagrass than are found in isolated communities. The release of crab larvae from saltmarsh areas during spring ebb tides provides a reliable source of food for a variety of fish species and a critical link in the estuary's food web.

Threats to the site include its proximity to one of the largest ports in eastern Australia; alterations to the shoreline, hydrology and bathymetry of Botany Bay causing increased wave energy on the southern side of the bay; residential and industrial development within the catchment; invasive species; and the impacts of climate change including sea level rise.

1.1.4.6 Elizabeth and Middleton Reefs Marine National Nature Reserve

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

Elizabeth and Middleton Reefs are located in the northern Tasman Sea, 150 km north of Lord Howe Island. Elizabeth and Middleton Reefs are a pair of isolated oceanic platform reefs separated from one another by 45 km of deep oceanic waters and together they represent the southern-most platform reefs in the world. Elizabeth Reef measures 8.2 km by 5.5 km and Middleton Reef, slightly larger but of a similar shape, at 8.9 km by 6.3 km

The site meets five of the Ramsar criteria: 1, 2, 3, 4 and 8.

Critical Services provided by this site are:

- It is representative of a unique ecosystem in the bioregion: southern-most open ocean coral reef platform in the world;
- It supports the green turtle (feeding habitat only, no nesting);
- It supports regionally high species diversity: fish; coral communities; molluscs; and sea cucumbers;
- It supports animal taxa at a vulnerable or critical stage of their lifecycle, particularly the Galapagos Shark (likely nursery ground); and,
- It supports the last known large population of blackrock cod.

Currently, Elizabeth and Middleton Reefs are mainly use for nature conservation and scientific research, with limited recreational diving and fishing also occurring.

1.1.4.7 Myall Lakes

The following information was extracted from the Australian Wetlands Database (DCCEEW, 2019a).

The Myall Lakes Ramsar site is 44,612 ha entirely within the Port Stephens Great Lakes Marine Park (NSW) just to the north of Newcastle.

The site meets three of the Ramsar criteria: 1, 2 and 3.

The Ramsar site provides habitat for both nationally and internationally threatened fauna species including the spotted-tail quoll, five species of frog, grey-headed flying fox, Australasian bittern, swift parrot, far eastern curlew and gould's petrel. The Myall Lakes also supports 946 species of terrestrial flora, 12 species of aquatic flora, 298 bird species, 58 mammals, 44 fishes, 40 reptiles and 37 amphibian species.

The lakes provide a wide range of intertidal habitats for resident and migratory shorebirds including coastal mudflats, sandy beaches, saltmarshes, brackish marshes, mangroves, and swamp forests, used for roosting, nesting, breeding, and feeding. Many groups of wetland bird species are represented in the Ramsar site such as pelicans, cormorants, grebes, swans and ducks, herons, egrets, bitterns, ibises and spoonbills, plovers and lapwings, as well as and wetlands related raptors.

There is a high diversity of animal species, with many of the site's animals are found in a wide range of wetland types, including estuarine waters; intertidal forested wetlands; coastal freshwater lagoons; permanent rivers, streams, or creeks; freshwater tree dominated wetlands; and shrub dominated wetlands.

The site's vegetation is particularly diverse, with 946 species of terrestrial flora, two mangrove species and 10 species of submerged aquatic flora recorded.

Use of this 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.

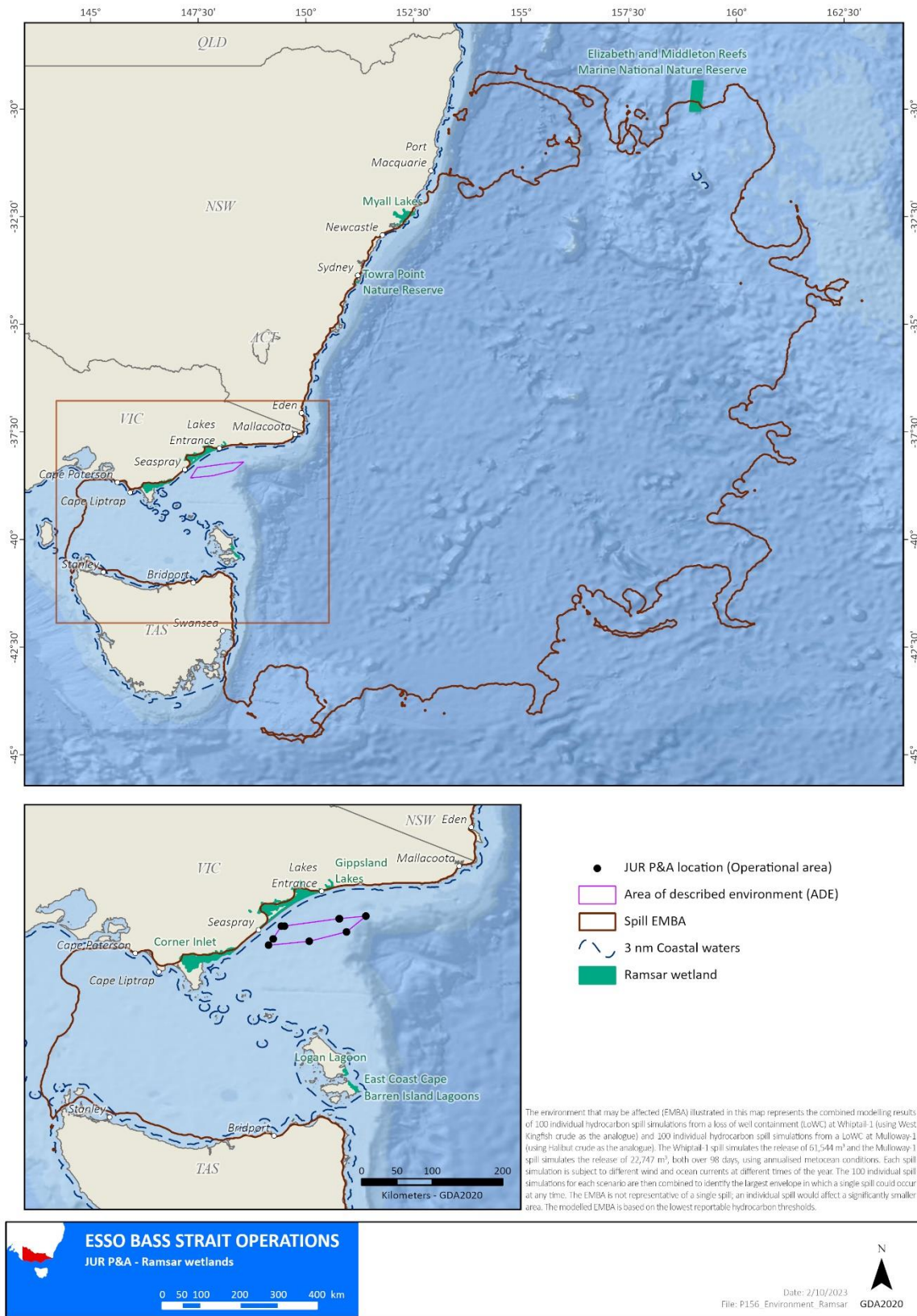


Figure 1-4 Ramsar wetlands within the EMBA

1.1.5 Nationally Important Wetlands

Nationally important wetlands (NIWs) are defined in Table 3-2 of the EP. The following 50 NIWs listed below are intercepted by the EMBA and shown in Figure 1-5. Only NIWs that are marine/coastal in nature have been listed, a full list of NIWs detected by the PMST report can be seen in Appendix D.

- Victoria:
 - Anderson Inlet
 - Benedore River
 - Bosses/Nebbor Swamp
 - Corner Inlet
 - Ewing's Marsh (Morass)
 - Jack Smith Lake State Game Reserve
 - Lake Bunga
 - Lake King Wetlands
 - Lake Tyers
 - Lake Victoria Wetlands
 - Lower Snowy River Wetlands System
 - Mallacoota Inlet Wetlands
 - Shallow Inlet Marine & Coastal Park
 - Snowy River
 - Sydenham Inlet Wetlands
 - Tamboon Inlet Wetlands
 - Thurra River
- Tasmania:
 - Logan Lagoon
 - Unnamed Wetlands (TAS011)
 - Unnamed Wetlands (TAS052)
- NSW:
 - Beecroft Peninsula
 - Clyde River Estuary
 - Cullendulla Creek and Embayment
 - Durras Lake
 - Five Islands Nature Reserve
 - Jervis Bay
 - Jervis Bay Sea Cliffs
 - Kooragang Nature Reserve
 - Lake Illawarra
 - Lake Macquarie
 - Merimbula Lake
 - Meroo Lake Wetland Complex
 - Minnamurra River Estuary
 - Moruya River Estuary Saltmarshes
 - Myall Lakes
 - Nadgee Lake and tributary wetlands
 - Nelson Lagoon
 - Pambula Estuarine Wetlands
 - Shoalhaven/Crookhaven Estuary
 - Swan Lagoon
 - Termeil Lake Wetland Complex
 - Towra Point Estuarine Wetlands
 - Tuggerah Lake

- Tuross River Estuary
- Twofold Bay
- Wallaga Lake
- Wallagoot Lagoon (Wallagoot Lake)
- Wallis Lake and adjacent estuarine islands
- Wamberal Lagoon
- Wollumboola Lake

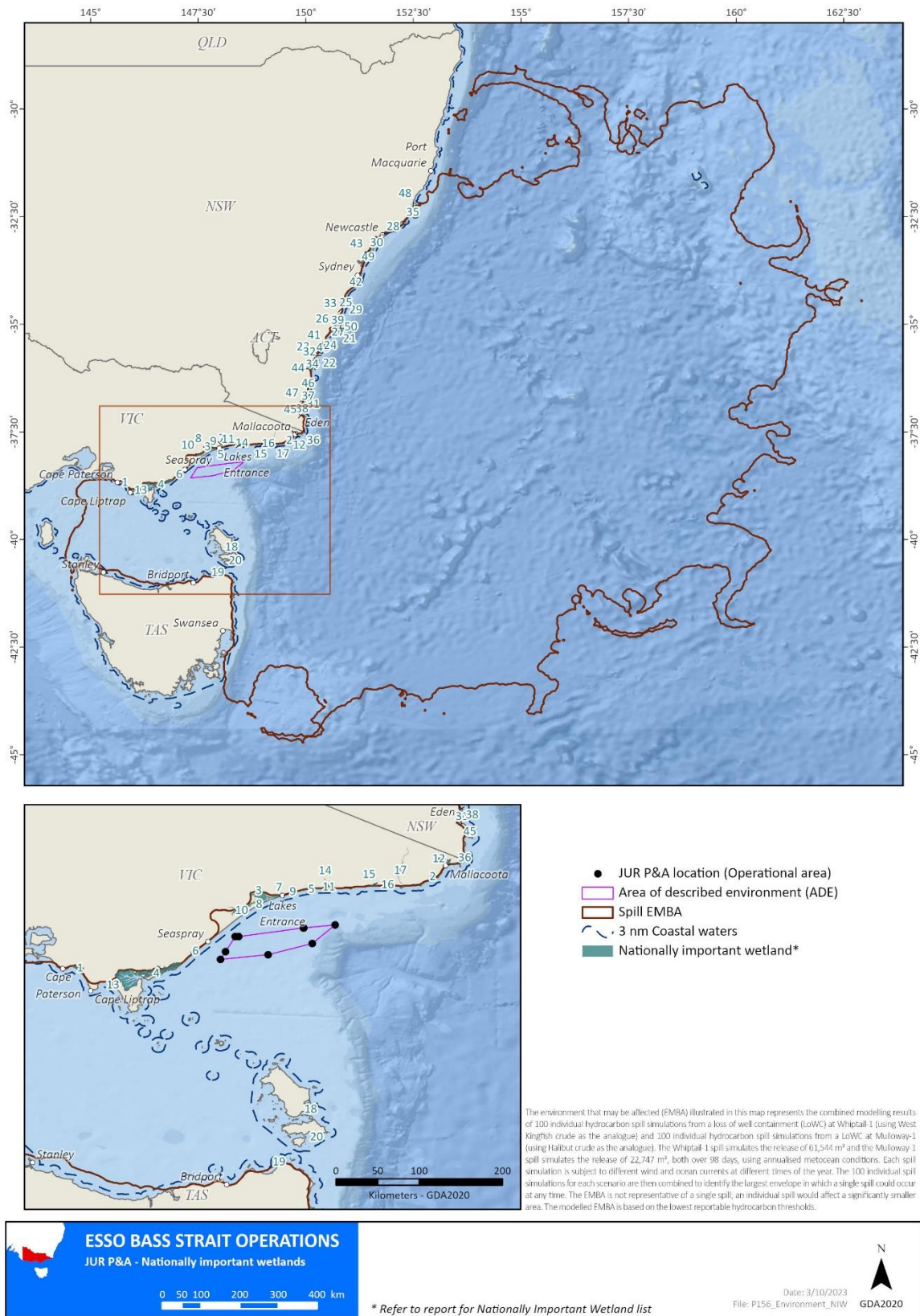


Figure 1-5 NIWs within the EMBA

1.1.6 Threatened Ecological Communities

Threatened ecological communities (TECs) are defined in Table 3-2 of the EP. TECs within the EMBA are described below and shown in Figure 1-6. Only TECs that are marine/coastal in nature have been described, a full list of TECs detected by the PMST report can be seen in Appendix D.

1.1.6.1 Littoral Rainforest and Coastal Vine Thicket

This TEC is listed as critically endangered under the EPBC Act. This ecological community is a complex of rainforest and coastal vine thickets influenced by its proximity to the sea; and provides habitat for over 70 threatened plants and animals and provides important stepping-stones along the eastern Australian coast for various migratory and marine birds. The community also provides an important buffer to coastal erosion and wind damage (CoA, 2019).

The ecological community occurs as a series of naturally disjunct and localised stands within 2 km of the eastern coastline of Australia or adjacent to a large saltwater body, such as an estuary on a range of landforms including dunes and flats, headlands, and sea-cliffs, including offshore islands (CoA, 2019).

This TEC has scattered and fragmented distribution from Princess Charlotte Bay, Queensland to East Gippsland in Victoria, including on estuarine and offshore islands. Sites that occur on the east Gippsland coast (including locations near Lakes Entrance, Marlo and Mallacoota) and communities found along most of the NSW coastline intersect with the EMBA.

1.1.6.2 Subtropical and Temperate Coastal Saltmarsh

This TEC is listed as vulnerable under the EPBC Act. The known distribution of this TEC includes the southern and eastern coasts of Australia where it occurs within a narrow margin in the subtropical and temperate climatic zones; and includes coastal saltmarsh occurring on islands within these climatic zones (DSEWPC, 2013a).

The physical environment for the ecological community is coastal areas under regular or intermittent tidal influence. The community consists mainly of salt-tolerant (halophytes - grasses, herbs, sedges, rushes and shrubs) and non-vascular vegetation including epiphytic algae, diatoms and cyanobacterial. 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). 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 (DSEWPC, 2013a).

This community occurs sporadically along coastline which intersects with the EMBA.

1.1.6.3 Giant Kelp Marine Forests of South East Australia

This TEC is listed as an endangered under the EPBC Act and has progressively diminished, especially on the east coast of Tasmania due to changing oceanographic conditions and corresponding changes in threatening processes caused by climate change (DSEWPC, 2012a). The TEC is found from Eddystone Point in the north east of Tasmania all along the eastern coastline and around the southern coast as far as Port Davey. The TEC community has also been known to intermittently develop on the northern and western coasts of Tasmania and occur in the coastal waters off Victoria and south east SA where physical conditions and environmental factors are favourable for its growth (DSEWPC, 2012a).

Giant kelp (*Macrocystis pyrifera*) plants are the foundation species of this TEC. Giant kelp is a large brown algae that grows on rocky reefs from the seafloor 8m below sea level and deeper. Its fronds grow vertically toward the water surface, in cold temperate waters off south east Australia. Their presence on a rocky reef adds vertical structure to the marine environment that creates significant habitat for marine fauna (DSEWPC, 2012a). The kelp species itself is not protected; to be considered a giant kelp marine forest, the plants must form a closed or semi-closed canopy at or below the water's surface and grow at depths generally greater than 8m on a rocky substrate. Other components of this TEC include a large range of marine algae, reef associated fish and numerous invertebrates that shelter, feed, and reproduce within giant kelp marine forests (DSEWPC, 2012a).

1.1.6.4 Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland

This TEC is listed as endangered under the EPBC Act and occurs along South East Corner bioregions of NSW in coastal catchments, on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. Coastal Swamp Oak Forest is often found in association with other vegetation types such as coastal saltmarsh and mangroves (DoEE, 2018a).

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. Most fauna species that form a part of the Coastal Swamp Oak Forest also inhabit adjacent wetlands, grasslands, woodlands, and forests. Many fauna species within the ecological community are listed as threatened under State and/or Commonwealth legislation including small mammals, reptiles, invertebrates, amphibians, and birds (DoEE, 2018a).

1.1.6.5 Assemblages of Species Associated with Open-coast Salt-wedge Estuaries of Western and Central Victoria Ecological Community

This TEC is listed as endangered under the EPBC Act and includes an assemblage of native plants, animals and micro-organisms associated with the dynamic salt-wedge estuary systems that occur within the temperate climate, microtidal regime, high wave energy coastline of western and central Victoria. This TEC is characterised by a core component of obligate estuarine taxa, with associated components of coastal, estuarine, brackish and freshwater taxa that may reside in the estuary for periods of time and/or utilise the estuary for specific purposes. Some assemblages of biota are dependent on the dynamics of salt-wedge estuaries for their existence, refuge, increased productivity, and reproductive success (DoEE, 2018b).

The TEC currently encompasses 25 estuaries in the region defined by the border between SA and Victoria and the most southerly point of Wilsons Promontory (DoEE, 2018b). Salt-wedge estuaries are typically ecosystems of high ecological value which are increasingly under threat. 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.

1.1.6.6 Coastal swamp sclerophyll forest of New South Wales and South East Queensland

This TEC is listed as endangered under the EPBC Act and includes the plants, animals and other organisms typically associated with forested palustrine wetlands, or swamp forests. This TEC is found in the temperate to subtropical coastal valleys between the Great Dividing Range and the coastline from near Gladstone in QLD, through to the south coast of NSW (DAWE, 2021). This TEC is present in low-lying coastal alluvial areas with minimal relief at elevations below 20m ASL but may occur occasionally up to 220 m ASL (DAWE, 2021).

This TEC often has a layered canopy, dominated by melaleucas and/or eucalyptus robusta. This TEC supports a range of aquatic, ground dwelling and aboreal species.

1.1.6.7 Coastal Upland Swamps in the Sydney Basin

This TEC is listed as endangered under the EPBC Act and is endemic to NSW. This TEC is including a range of vegetation and fauna associated with periodically waterlogged soils on the Hawkesbury sandstone plateaux (DoE 2014). This TEC is found in the eastern part of the Sydney Basin, occurring primarily on poorly permeable sandstone plateaux in low relief headwater valleys of streams and on sandstone benches with abundant seepage moisture. Majority of the swamps exist at elevations of 200–450 m ASL. However, the elevation of some swamps in the region can vary from as low as 20 m to around 600 m ASL (DoE, 2014a).

The TEC is characterised by highly diverse and variable mosaics of vegetation depending on soil conditions, size of the site, recent rainfall conditions, fire regimes and disturbance history. The swamps also provide habitat for a wide range of fauna permanently or as transients (DoE, 2014a).

1.1.6.8 Posidonia australis seagrass meadows of the Manning Hawkesbury ecoregion

This TEC is listed as endangered under the EPBC Act. This TEC comprises of plants, animals and micro-organisms associated with seagrass meadows dominated by *Posidonia australis* occurring in the warm temperate Manning Shelf and Hawkesbury Shelf bioregions (NSW) from Wallis Lake to Port Hacking (DoE, 2015a). This TEC mainly occurs within sheltered environments of permanently open estuaries, typically in subtidal waters at depths ranging less than 1-10 m on sand and silty mud substrate (DoE, 2015a).

The wide strap-like leaves of *Posidonia australis* provides substrate for a diverse collection of benthic flora. *Posidonia australis* is believed to provide the greatest habitat structure of any of the seagrass species found in NSW, supporting an abundance of fauna.

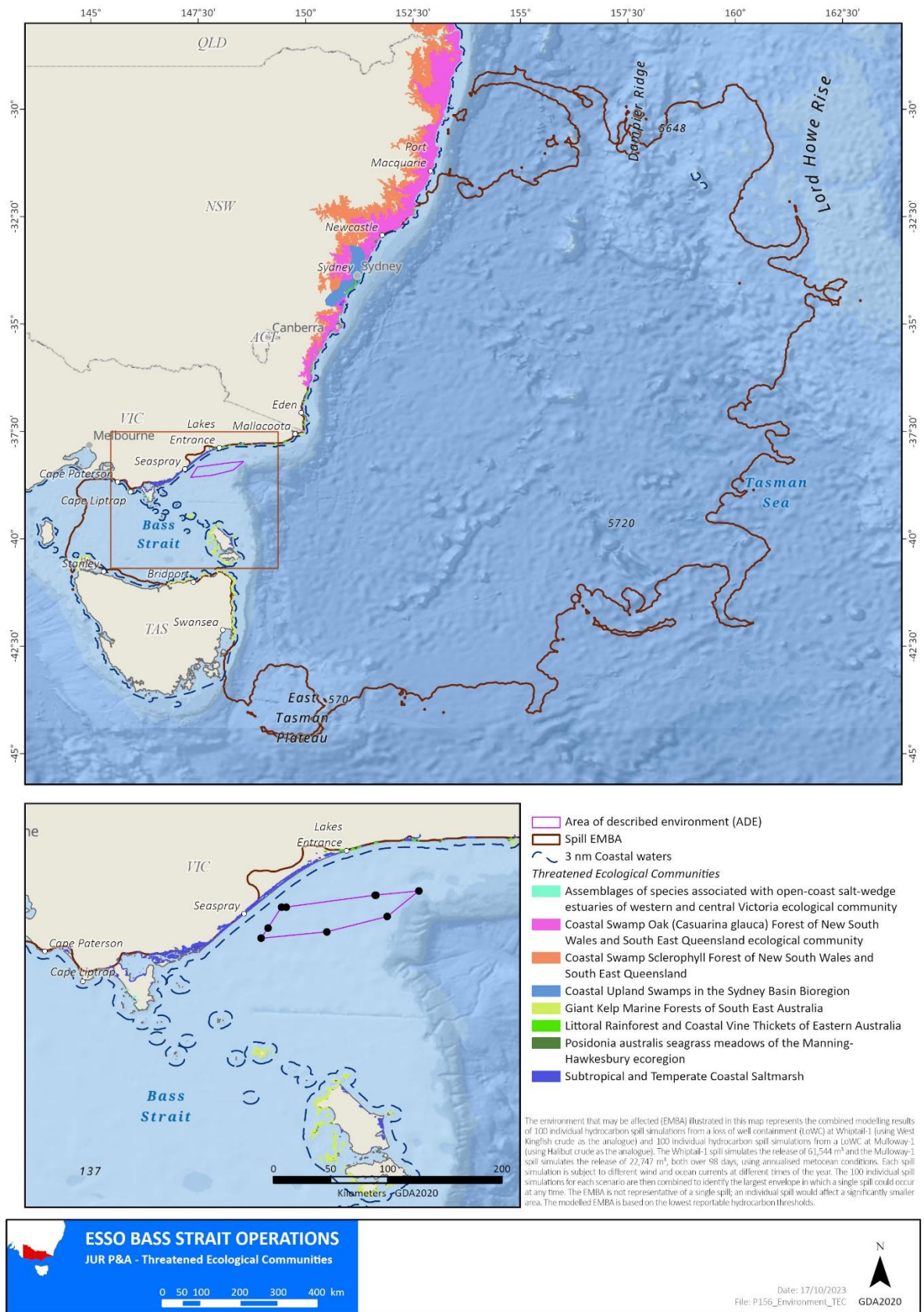


Figure 1-6 TECs intersected by the EMBA

1.1.7 Australian Marine Parks

Australian Marine Parks (AMPs) are defined in Table 3-2 of the EP. AMPs within the EMBA are described below and shown in Figure 1-7.

1.1.7.1 East Gippsland Marine Park

The East Gippsland Marine Park is located off the north-east corner of Victoria and is 4,127 km² the full area of the Marine Park is designated as a multiple use zone (IUCN VI) (DNP, 2013).

The park contains representative samples of an extensive network of canyons, continental slope, and escarpment at depths from 600 m to more than 4000 m. The geomorphic features of this reserve include rocky-substrate habitat, submarine canyons, escarpments and a knoll, which juts out from the base of the continental slope.

The reserve includes both warm and temperate waters, which create habitat for free-floating aquatic plants or microscopic plants (i.e. phytoplankton) communities. Complex seasonality in oceanographic patterns influences the biodiversity and local productivity. The East Australian Current brings subtropical water from the north, and around Cape Howe the current forms large eddies, with a central core of warm water. Around the outside of the eddies, cooler, nutrient-rich waters mix with the warm water creating conditions for highly productive phytoplankton growth, which supports a rich abundance of marine life. During winter, upwellings of cold water may occur and bring nutrient-rich waters to the surface, boosting productivity (DNP, 2013).

Many oceanic seabirds forage in these waters, including albatrosses, petrels and shearwaters.

Major conservation values include:

- Examples of ecosystems, habitats and communities associated with the Southeast Transition and associated with sea-floor features of abyssal plain/deep ocean floor, canyon, escarpment, knoll/abyssal hill and slope.
- Features with high biodiversity and productivity are the Bass Cascade and Upwelling East of Eden.
- Important foraging area for the wandering, black-browed, Indian yellow-nosed and shy albatrosses; great-winged petrel; wedge-tailed shearwater; and cape petrel.
- Important migration area for the humpback whale.

1.1.7.2 Beagle Marine Park

The Beagle Marine Park lies entirely within Bass Strait and represents an area of shallow continental shelf ecosystems in depths of about 50-70 m that extends around south-eastern Australia to the east of Tasmania. The seabed that it covers formed a land bridge between Tasmania and Victoria during the last ice age 10,000 years ago. The full area of the Marine Park (2,928 km²) is designated as a multiple use zone (DNP, 2013).

The Beagle Commonwealth Marine Reserve represents an area of shallow continental shelf ecosystems in depths of about 50-70 m that extends around south-eastern Australia to the east of Tasmania. The seafloor that it covers formed a land bridge between Tasmania and Victoria during the last ice age 10,000 years ago.

Major conservation values include:

- Ecosystems, habitats and communities associated with the Southeast Shelf Transition and associated with sea-floor features of basin, plateau, shelf, sill.
- Important migration and resting on migration area for the Southern right whale
- Important foraging area for the Australian fur seal, killer whale, great white shark, shy albatross, Australasian gannet, short-tailed shearwaters, pacific gulls, silver gulls, crested tern, common diving petrel, fairy prion, black-faced cormorant and little penguin.

Maritime heritage sites of the wreck of the steamship SS Cambridge and the wreck of the ketch Eliza Davies are within the park.

1.1.7.3 Flinders Marine Park

The Flinders Marine Park is located east of the north-east tip of Tasmania and Flinders Island and extends over 400 km eastward. It covers a depth range from about 40 m on the shallow continental shelf to abyssal depths of 3000 m or more near the edge of Australia's exclusive economic zone. The park (27,043 km²) is recognised as both a Marine National Park Zone and Multiple Use Zone.

Key features of this area are the continental shelf, and a long section of steep continental slope, incised by a series of deep submarine canyons. Sea bottom habitats include sheer rocky walls and large rocky outcrops that support a rich diversity of small seabed animals, such as lace corals and sponges. These and the large expanses of sandy and muddy sediments are habitats to a wide variety of fishes and to populations of the giant crab. Areas between 400 m and 600 m of the continental slope seafloor are habitat for dogfish and gulper sharks, and Harrison's dogfish has been recently recorded in the reserve (DNP, 2013).

Major conservation values include:

- Ecosystems habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province, the Southeast Transition, the Southeast Shelf Transition.
- Associated with sea-floor features abyssal plain/deep ocean floor, canyon, plateau, seamount/guyot and shelf slope.
- Features with high biodiversity and productivity are east Tasmania subtropical convergence zone.
- The park is an important foraging area for wandering, black-browed, Indian yellow-nosed and shy albatrosses; northern giant petrel, gould's petrel, cape petrel, killer whale, great white shark and Harrison's dogfish.
- The park is an important migration area for the humpback whale.

1.1.7.4 Jervis Marine Park

Jervis Marine Park is located about 20km offshore, adjacent to the NSW Jervis Marine Park comprising an area of 2,473 km² and covering a depth range from 120 - 5,000 m approximately. The park has Habitat Protection and Special Purpose (Trawl) zones (DNP, 2018).

Seafloor features represented in the reserve include abyssal-plain/deep ocean floor, canyons, shelf and slope. The reserve include two key ecological features, it is one of three shelf incising canyons occurring within the region (unique sea-floor feature with ecological properties of regional significance) and shelf rocky reefs.

Major conservation values are:

- Ecosystems habitats and communities associated with the Central Eastern Province and Southeast Shelf Transition.
- Important foraging area for seabirds, grey nurse sharks and humpback whales.
- Key ecological features; Canyons on the eastern continental slope and shelf rocky reefs.
- Contains one known shipwreck listed under the Historic Shipwrecks Act 1976 - HMAS Tattoo (wrecked in 1939).

1.1.7.5 Freycinet Marine Park

The Freycinet Marine Park is located east of Tasmania, offshore from the Freycinet Peninsula. It covers 57,942 km², with depths from 40 - 3,000 m. It has Marine National Park, Recreational Use and Multiple Use Zones. The reserve spans the continental shelf and deeper water ecosystems that extend around south-eastern Australia to the east of Tasmania. The shelf is adjoined to a large offshore saddle (DNP, 2013).

Major conservation values are:

- Ecosystems habitats and communities associated with the Tasmania Province, the Tasmanian Shelf Province, the Southeast Transition.
- Associated with sea-floor features are abyssal plain/deep ocean floor, canyon, escarpment, knoll/abyssal hill, saddle, seamount/guyot, terrace and shelf.
- Features with high biodiversity and productivity are east Tasmania subtropical convergence zone.
- The park is an important foraging area for wandering, black-browed, and shy albatrosses, cape petrel, fairy prion, sei whales and killer whales.
- Important migration and resting on migration area for southern right whales.
- Important migration area for the humpback whales.

1.1.7.6 Central Eastern Marine Park

Central Eastern Marine Park begins 30km east of Coffs Harbour. It covers 70,054 km², with depths from 120 - 6,000 m. it has Marine National Park Zone Habitat Protection Zone/Special Purpose Zone (Trawl).

The Park is significant because it includes habitats, species and ecological communities associated with the Central Eastern Province, the Central Eastern Shelf Transition and the Tasman Basin Province. It includes three key ecological features: canyons on the eastern continental slope; the Tasmantid Seamount Chain; and the Tasman Front and eddy field (both valued for high productivity, aggregations of marine life, biodiversity and endemism) (DNP, 2018).

Major conservation values are:

- Ecosystems, habitats, and communities associated with Central Eastern Province, Central Eastern Shelf Transition and Tasman Basin Province
- It is an important area for foraging and breeding of seabirds and migrating humpback whales
- KEFs of the Marine Park are the Tasmantid Seamount Chain, Canyons on the eastern continental slope and Tasman Front and Eddy Field
- Sea country is valued for Indigenous cultural identity
- Maritime heritage site for shipwrecks *Amelia* (1816) and *Illagong* (1872)
- Social values are tourism, commercial fishing and recreation.

1.1.7.7 Lord Howe Marine Park

The Lord Howe Marine Park is located approximately 550 km offshore of NSW, adjacent to the NSW Lord Howe Island Marine Park and World Heritage Area. The park has National Park Zone/Habitat Protection Zone, Habitat Protection Zone (Lord Howe), Recreation Zones/Special Purpose Zone (Trawl).

The waters are a unique mix of warm tropical and cool temperate ocean currents – are home to over 500 fish species, more than 90 coral species and countless other marine species, many only found in the immediate area. A wide range of habitats include a barrier coral reef and lagoon, and fringing reefs dominated either by coral or macroalgal communities (DNP, 2018).

Major conservation values are:

- Ecosystems, habitats and communities associated with Lord Howe Province and Tasman Basin Province
- Important area for foraging and breeding of seabirds and migrating humpback whales.
- KEFs of the Marine Park are Lord Howe Seamount Chain, Elizabeth and Middleton Reefs and Tasman Front and Eddy Field.
- Cultural values are the marine environment around Lord Howe Island valued by the Islanders and sea country is valued by the Indigenous people.
- National and world heritage listed.
- Tourism, commercial fishing, recreation, including fishing, and scientific research, are important activities in the Marine Park.

1.1.7.8 Hunter Marine Park

Encompassing three key ecological features, the Hunter Marine Park is located offshore from Port Stephens in NSW and extends out approximately 100 km. The marine park (6,257 km²) has Habitat Protection and Special Purpose zones.

The Hunter Marine Park is significant because it contains habitats, species and ecological communities, representative of the Central Eastern Province and the Central Eastern Shelf Province. It includes three KEFs. The Marine Park supports a range of species, including species listed as threatened, migratory, marine, or cetacean under the EPBC Act (DNP, 2018).

The major conservation values are:

- Ecosystems, habitats and communities associated with: Central Eastern Province and Central Eastern Shelf Province.
- Important area for: foraging seabirds and humpback whales, migrating humpback whales and aggregation of grey nurse sharks.
- Key ecological features of the Marine Park are Canyons on the eastern continental slope, Shelf rocky reefs and Tasman Front and eddy field.
- The Marine Park contains one known shipwreck listed under the Historic Shipwrecks Act 1976 - *India* (1884).

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

1.1.7.9 Boags Marine Park

The Boags Marine Park is north of Three Hummock Island off Tasmania's north-west coast. The park covers 537 km² with depths mostly between 40-80 m. The marine park has a multiple use zone.

The Boags marine park represents an area of shallow ecosystems. It encompasses the fauna of central Bass Strait, which is expected to be especially rich based on studies of several seafloor-dwelling animal groups. The Boags Marine Reserve contains a rich array of life, particularly bottom-dwelling animals and animals living in the seafloor sediments and muds, such as crustaceans, polychaete worms and molluscs, as is common for the Bass Strait seabed.

The reserve is adjacent to the important seabird breeding colonies of Tasmania's northwest, particularly the Hunter group of islands (Three Hummock Island, Hunter Island, Steep Island, Bird Island, Stack Island and Penguin Islet), and is an important foraging area for a variety of seabirds. Great white sharks also forage in the reserve.

The major conservation values are:

- Ecosystems, habitats, and communities associated with the Bass Strait Shelf Province and associated with seafloor features including the plateau and tidal sand wave/sandbank.
- Important foraging area for: the shy albatross, Australasian gannet, short-tailed shearwater, fairy prion, black-faced cormorant, common diving petrel and the little penguin.

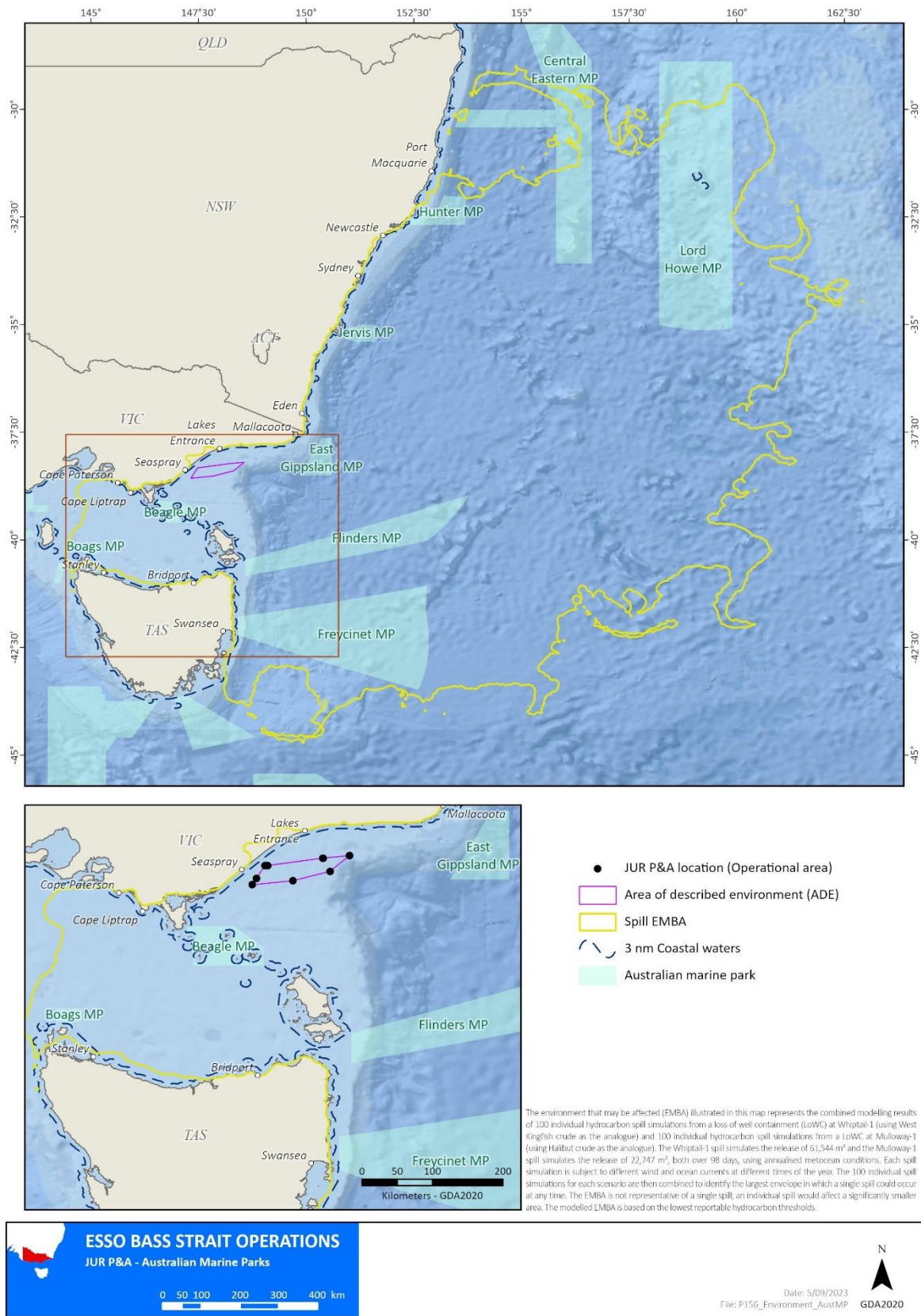


Figure 1-7 AMPs intersected by the EMBA

1.1.8 Key Ecological Features

Key Ecological Features (KEFs) are defined in Table 3-2 of the EP. KEFs within the EMBA are described below and shown in Figure 1-8.

1.1.8.1 Upwelling East of Eden

The Upwelling East of Eden is present along the eastern Victorian and southern NSW coasts and is defined as a KEF as it is an area of high productivity and 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, the basis of productive food chains including zooplankton, copepods, krill, and small pelagic fish.

The upwelling supports regionally high primary productivity supports fisheries and biodiversity, including top order predators, marine mammals, and seabirds.

This area is one of two feeding areas for blue whales (*Balaenoptera musculus*) and humpback whales, known to arrive when significant krill aggregations form. The area is also important for seals, other cetaceans, sharks, and seabirds.

1.1.8.2 Big Horseshoe Canyon

Big Horseshoe Canyon is defined as a key ecological feature as it is an area of high productivity and aggregations of marine life. The KEF lies south of the coast of eastern Victoria. This feature is the eastern most arm of the Bass Canyon system (CoA, 2015).

The steep, rocky slopes of the Big Horseshoe Canyon provide hard substrate habitat for attached large epifauna. Sponges and other habitat forming species provide structural refuges for benthic fishes, including the commercially important pink ling.

The Big Horseshoe Canyon is the largest southeastern canyon sampled for benthic biodiversity (Williams A, 2009). It has a total area of 319 km² in 1,500 m depth that supports a rich, abundant, filter-feeding benthic megafauna, including large sponges in dense beds of large individuals at 120 m and at 300 – 400 m, dense stands of the stalked crinoid (*Metacrinus cyaneus*) in 200–300 m, and many species of octocoral (especially gold corals) at depths > 700 m (Kloser RJ, 2001). It is the only known temperate location of the stalked crinoid (*Metacrinus cyaneu*).

1.1.8.3 Shelf Rocky Reefs (Temperate East)

The Shelf Rocky Reefs habitat has been identified as a key ecological feature as it is considered a unique sea-floor feature which is associated with ecological properties of regional significance.

Shelf rocky reefs feature support a range of complex benthic habitats that, in turn, support diverse benthic communities. Along the continental shelf, south of the Great Barrier Reef, benthic communities on rock outcrops and boulder substrates shift from algae-dominated communities to those dominated by attached invertebrates, including dense populations of large sponges, with a mixed assemblage of moss animals and soft corals; this shift generally occurs at a depth of 45 m. Below wave-influenced areas, massive and branched growth forms of sponges are more prevalent, and sponge species richness and density generally increases with depth along the NSW coast.

Collectively, these invertebrates create a complex habitat-forming community that supports microorganisms and other invertebrates, such as crustaceans, molluscs, annelids, and echinoderms. These habitats also contribute to increased survival of juvenile fish by providing refuge from predation. Rocky reef habitats on Australia's east coast support a diverse assemblage of demersal fish, which show distinct patterns of association with shelf-reef habitats, e.g. jackass morwong, barracouta, orange-spotted catshark, eastern orange perch, butterfly perch and warehou are species that distinguish rocky reef habitats at depths greater than 45 m from those of soft sediments.

1.1.8.4 Canyons on the Eastern Continental Slope

The Canyons on the eastern continental slope are defined as a key ecological feature as they are a unique seafloor feature with enhanced ecological functioning and integrity, and biodiversity, which apply to both its benthic and pelagic habitats.

Canyon systems have a marked influence on diversity and abundance of species through their combined effects of topography, geology, and localised currents, all of which act to funnel nutrients and sediments into the canyon.

As such, these features are valued for their enhanced productivity and biological diversity properties. Canyons contribute to habitat diversity by providing a hard surface that offers anchoring points and vertical relief for filter feeder benthic species. Hard substrata support different species assemblages; particularly favouring large filter feeder-dominated benthic species (e.g. attached sponges and crinoids) that thrive in abundance in the enhanced current flow conditions. Large benthic animals such as sponges and feather stars are abundant, with particularly high diversity found in the upper slope regions (150 – 700 m). A range of higher trophic level species, including crustaceans, echinoderms, bivalves, cephalopods and fish are then attracted to these regions. Canyons are therefore significant contributors to overall biodiversity, particularly in terms of benthic organisms. Due to isolation, restricted dispersal, and connectivity, it is also expected this diversity encompasses a high degree of endemism, further contributing to the social and biological values of these communities.

The Canyons on the eastern continental slope lie off the coast of NSW.

1.1.8.5 Seamounts South and East of Tasmania

The Seamounts south and east of Tasmania are defined as a key ecological feature as they are an area of high productivity and 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 southeast of southern Tasmania). 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.

These seamounts create localised upwellings of nutrient rich waters from the seafloor. The hard substrate supports sessile invertebrates.

1.1.8.6 Tasmantid Seamount Chain

Just 150 - 600 km east of the Australian mainland is a 2,000 km long chain of submerged volcanoes which are the Tasmantid Seamount Chain that rise over 4,000 m above the seafloor - nearly twice the height of the highest mountain on the mainland.

These undersea mountains, the Tasmantid Seamounts, are extinct volcanoes formed from around 40 to 6 million years ago above a mantle hotspot, similar to the Hawaiian Islands. The seamount chain includes Lord Howe Island and Elizabeth and Middleton Reefs. These isolated, oceanic reefs are thought to support a diverse range of tropical and temperate marine life, including both warm-water and cold-water corals and an abundance of fish species. This diversity is a result of the effect of the East Australian Current on the reefs as it exposes the area to its warm waters, in contrast to the surrounding cooler ocean.

The information on the Tasmantid Seamounts has been based on observations from some seamounts in other locations, however for benthic ecosystems, the data for the Tasmantid seamount chain is poor (CSIRO, 2012). Thus, the seamount chain's conservation values are defined in terms of containing feature scale geomorphic surrogates for biodiversity (basin, plateau, seamount and abyssal plain/deep ocean floor). In general what is known is that Taupo seamount supports a diverse and dense invertebrate megafauna and abundant sharks; a high diversity of demersal fishes is recorded in commercial fishery logbooks and fishery observers; individual seamounts vary greatly in size in shelf and upper/mid slope depths where benthic biodiversity is expected to be greatest (CSIRO, 2012).

1.1.8.7 Tasman Front and Eddy Field

The Tasman Front and eddy field occurs in the Temperate East Marine Region and is defined as a key ecological feature formed by complex and dynamic oceanographic processes supporting transient patches of enhanced productivity that, in turn, attract aggregations of species across trophic levels, including top predators such as tuna and sharks.

This feature also supports biological connectivity with seamount habitats (Tasmantid Seamount Chain – refer Section 1.1.8.6 above) further offshore. The Tasman Front is formed by a current that moves to the north in winter and to the south in summer. The Front separates the warm, nutrient-poor waters of the Coral Sea from the nutrient-rich waters of the Tasman Sea and its boundary can and associated eddies vary in shape, strength, and location.

In the southern portion of the Temperate East Marine Region, the Tasman Front creates a complex oceanographic environment with vertical mixing causing enhanced productivity. Patches of productivity are important for mid-level consumers including turtles and top fish predators. This is supported by Fisheries oceanography studies that describe a positive relationship between fish catch rates and proximity to frontal features, and a predominance of bigeye tuna and swordfish associated with the Tasman Front (DoEE, 2019a).

1.1.8.8 Lord Howe seamount chain

Lord Howe Seamount Chain is a chain of submerged volcanoes running 1000 km north–south, the seamount chain includes Lord Howe Island and Elizabeth and Middleton Reefs. This seamount chain runs east of the Tasmantid Seamount discussed above (refer Section 1.1.8.6).

These isolated, oceanic reefs support a diverse range of tropical and temperate marine life, including both warm-water and cold-water corals and an abundance of fish species. This diversity is a result of the effect of the East Australian Current on the reefs as it exposes the area to its warm waters, in contrast to the surrounding cooler ocean (CoA, 2012).

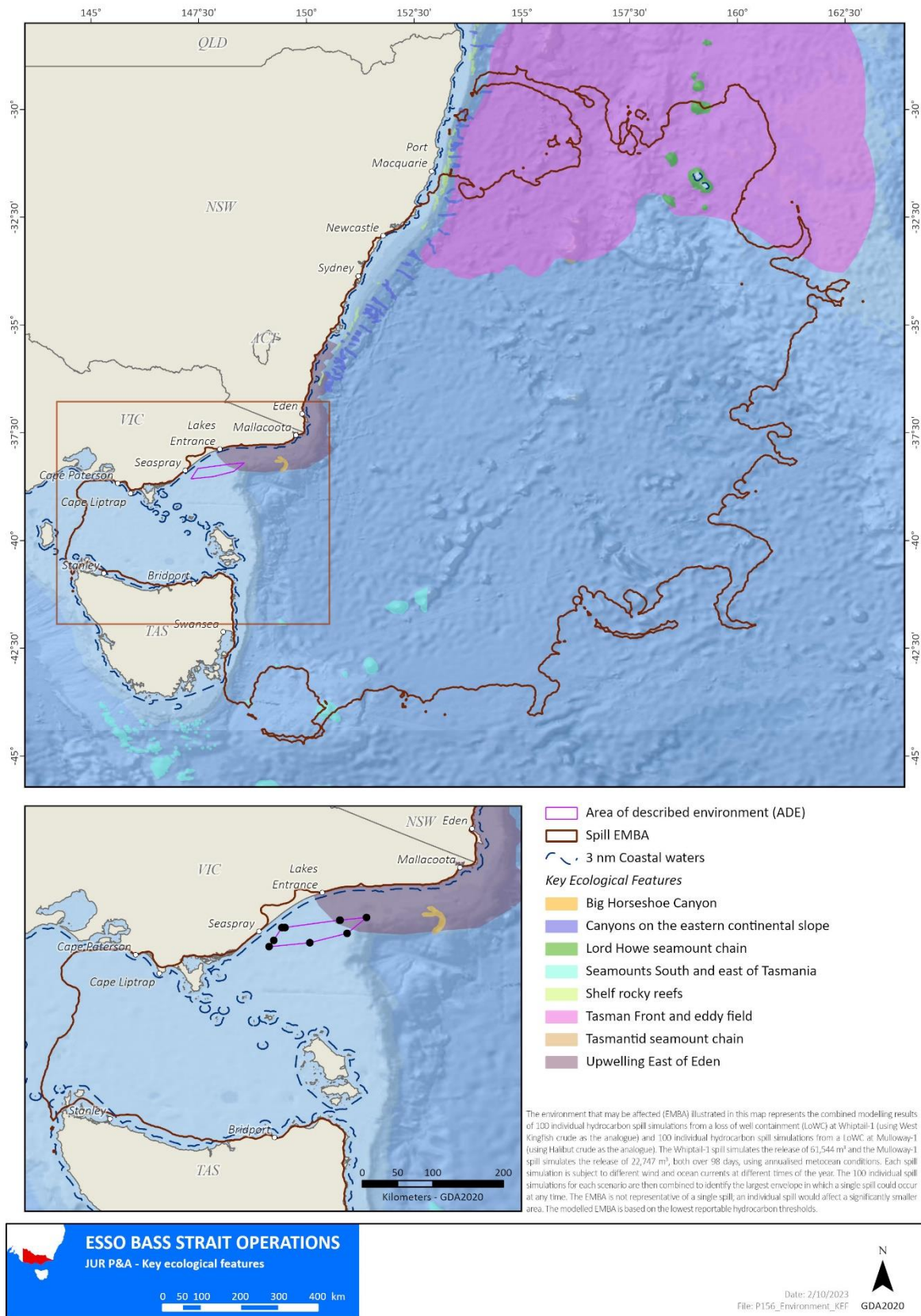


Figure 1-8 KEFs intersected by the EMBA

1.1.9 Other Protected Areas

The National Reserve System is Australia's network of protected areas and is made up of Commonwealth, state and territory reserves, Indigenous lands, and protected areas. National parks and reserves which include marine protected areas and terrestrial protected areas are declared under each individual state's legislation and are managed by state authorities.

This section only lists the protected areas that are marine and/or coastal in nature that are intersected by the EMBA and that are spatially defined. A detailed list of other protected areas found within the EMBA can be seen in the PMST report (Appendix D). The marine/aquatic and coastal protected areas in relation to each state are mapped in Figure 1-9, Figure 1-10 and Figure 1-11.

1.1.9.1 Marine/Aquatic Protected Areas

Table 1-1 lists and describes the marine/aquatic protected areas that are within the EMBA.

Table 1-1 Marine/aquatic protected areas that are within the EMBA

Name	Description
Victoria (see Figure 1-9)	
Beware Reef Marine Sanctuary	<p>The Beware Reef Marine Sanctuary is a State marine protected area, IUCN Category II, located approximately 5 km southeast of Cape Conran, comprising of a granite outcrop covering an area of 220 ha and extending for a distance of approximately 500 m from the edge of the exposed reef. It rises from a depth of approximately 30 m and is exposed at low tide, providing a resting area for Australian fur seals.</p> <p>The reef is covered by outcrops of Bull kelp (<i>Durvillaea</i> sp.) and supports a range of marine life, including seahorses and leafy seadragons (ParksVic, Beware Reef Marine Sanctuary., 2017a). Beware Reef is a popular location for recreational divers and the remains of numerous shipwrecks can be encountered in the sanctuary.</p>
Bunurong Marine National Park & Marine Park	<p>The Bunurong Marine National Park is 2,100 ha in size and adjoins the Bunurong Marine Park and Bunurong Coastal Reserve.</p> <p>The coastal waters protect a remarkable range of habitats including intertidal reefs, subtidal rocky reefs, algal gardens and seagrass beds. The coastal waters share the cool waters of Victoria's central and western coasts but, unlike those shores, are relatively protected from the oceanic south-westerly swell by the position of distant King Island. The gently sloping rocky seafloor is also unusual in Victoria.</p> <p>The marine life of the region is considered special due to the unusual set of environmental conditions. The intertidal sandstone reefs of the area boast the highest recorded diversity of intertidal and subtidal invertebrates in eastern Victoria. The range of seaweed species is also large and includes greens, blue-greens, browns and encrusting, coralline reds. Seagrass meadows and sandy bays are also important habitats within the area. The diversity of habitats supports many marine animals including seastars, featherstars, crabs, snails, Port Jackson Sharks and up to 87 species of fish. The coastal area is home to the Hooded plover which breeds on the beaches (ParksVic, 2018).</p>
Cape Howe Marine National Park	<p>The Cape Howe Marine National Park is situated in the far east of Victoria alongside the border with NSW. The habitats found in the park include kelp forests, granite and sandstone reefs, sandy beaches and soft sediments.</p> <p>The marine life of the area is particularly diverse because species of both warm and cool areas can reside here. Whales pass by Cape Howe on their migration from Antarctica and are sometimes followed by a pod of orcas. Little penguins also forage at the rook on Gabo Island (ParksVic, 2017b).</p>

Name	Description
<p>Corner Inlet Marine National Park</p>	<p>Corner Inlet Marine National Park is located north and east of Wilson's Promontory adjacent to the southern shores of Corner Inlet. The National Park protects large areas of seagrass including the only extensive <i>Posidonia australis</i> meadow in southern Australia. Amongst the seagrass live over 300 marine invertebrates including crabs, seastars, sea snails, squid and many fish including pipefish, stingrays, flathead, whiting and flounder. The seagrass and surrounding marshes are particularly important for international migratory birds such as the Eastern curlew (ParksVic, 2017c). The area has been listed as part of the Corner Inlet Ramsar Site.</p>
<p>Ninety Mile Beach Marine National Park</p>	<p>Ninety Mile Beach Marine National Park is located 30 km south of Sale and adjacent to Gippsland Lakes Coastal Park, the Ninety Mile Beach Marine National Park covers 5 km of coastline.</p> <p>The huge subtidal sandy expanses characteristic of the area exhibit particularly high species diversity including tube building worms, small molluscs and many tiny crustaceans. Many pelagic fish species feed on the benthos, and young Great white sharks have also been observed feeding in the area (ParksVic, 2017d).</p>
<p>Nooramunga Marine and Coastal Park</p>	<p>Nooramunga Marine and Coastal Park covers an area of 30,170 ha in Corner Inlet. The park consists of shallow marine waters, intertidal mudflats and a series of over 40 sand islands. The Park, along with the Corner Inlet Marine and Coastal Park to its west, contain the largest stands of white mangrove and saltmarsh areas in Victoria. The saltmarshes are dominated by beaded glasswort (<i>Sarcocornia quinqueflora</i>) and shrubby glasswort (<i>Tecticornia arbuscula</i>). Seagrass meadows also occur throughout the park. Seaward of the mangroves are extensive areas of intertidal mud and sand flats.</p> <p>An immense range of marine plants and invertebrates can be found here that provide food for the thousands of migratory wading birds that arrive each year from their northern hemisphere breeding grounds. The seagrass meadows provide habitat to over 300 marine invertebrates, including a range of large crabs, seastars, sea snails, iridescent squid and many fish including pipefish, stingarees, flathead, whiting and flounder. Finfish such as snapper, King George whiting, flathead, garfish and salmon are caught by recreational fishers. Thirty-two migratory wader species have been recorded in the park.</p>
<p>Point Hicks Marine National Park</p>	<p>The Point Hicks Marine National Park is located alongside Croajingolong National Park, East Gippsland. Many creatures found here are not found further west because the water is too cold, for example the large black sea urchin.</p> <p>The National Park is approximately 4,000 ha in area, with fauna including intertidal and shallow subtidal invertebrates, diverse sessile invertebrates living on subtidal reefs, kelps and small algae, and a high diversity of reef fish. In addition to the subtidal reef, the marine environment around Point Hicks includes intertidal rock operational areas and offshore sands (ParksVic, 2017e). Point Hicks Marine National Park is also a popular location for recreational divers. Remains of two shipwrecks can be encountered in the National Park.</p>
<p>Shallow Inlet Marine and Coastal Park</p>	<p>Shallow Inlet Marine and Coastal Park is 2,300 ha located on Victoria's south-eastern coastline near Wilson's Promontory (VicWater, 2004).</p> <p>Shallow Inlet is a large, wave-dominated estuary in mostly unmodified condition. The inlet is a large tidal embayment with a single marine connection partly enclosed by a sand barrier complex of spits, bars and mobile sand dunes. The entrance is permanently open to the sea.</p> <p>Marine and intertidal areas of the inlet are characterised by extensive seagrass meadows which are important nursery areas for fish and other marine life. Beds of <i>Heterozostera tasmanica</i> are restricted to deeper water adjacent to the main channels, while <i>Zostera</i></p>

Name	Description
	<p>muelleri, the most abundant seagrass, is widespread. The extensive mudflats and sandy intertidal areas provide excellent habitat for shorebirds. Over 16,000 wading birds are recorded in summer (VicWater, 2004).</p> <p>Many aboriginal middles are found along the coast to the west of Shallow Inlet. Shallow Inlet is popular for recreational activities such as fishing, sailboarding, camping and picnicking.</p>
<p>Wilsons Promontory Marine National Park</p>	<p>Wilsons Promontory Marine National Park is Victoria's largest Marine Protected Area at 15,550 ha and is located around the southern tip of Wilsons Promontory.</p> <p>There is a diversity of marine life including octopus, sharks and rays. It is a popular location for recreational divers particularly around the sponge gardens. The offshore islands, including Anser Island, support many colonies of fur seals and oceanic birds such as little penguins, Fairy prions, Silver gulls and Pacific gulls (ParksVic, 2017f).</p> <p>Wilsons Promontory National Park is a popular tourist destination due to its coastal scenery and diverse natural environments. Tourist activities include walking, camping, sightseeing, viewing wildlife, fishing, boating, diving, sea kayaking and surfing. The park is important for its range of plants and animals, including many threatened species including the New Holland mouse, ground parrot and white-bellied sea eagle.</p> <p>Coastal features include expansive intertidal mudflats, sandy beaches and sheltered coves interrupted by prominent headlands and granite cliffs in the south, backed by coastal dunes and swamps. The avifauna recorded for Wilsons Promontory includes around half of all Victorian bird species. Significant species of migratory wading birds feed on the tidal mudflats of Corner Inlet within and adjoining the park. The offshore islands have breeding and roosting sites for sea birds, including a large number of short-tailed shearwaters (ParksVic, 2017f).</p>
<p>Tasmania (see Figure 1-10)</p>	
<p>Arthur Bay Conservation Area</p>	<p>Arthur Bay Conservation Area covers 7.5 km² and includes the coastline and marine areas south of Blue Rocks and north of Whitemark on the west coast of Flinders Island. There is no management plan in place.</p>
<p>Chappell Islands Nature Reserve</p>	<p>There is a scarceness of information regarding this nature reserve online. However, according to the Tasmania Parks and Wildlife Service listing 2022 the Chappell Islands Nature Reserve is 199 ha and is designated IUCN Category IV. There is currently no management plan in place.</p>
<p>Governor Island Marine Nature Reserve</p>	<p>Governor Island was one of the first marine reserves established in Tasmania in 1991, the reserve covers Governor Island and all waters and other islands within a 400 m diameter semi-circle from the eastern shoreline (DPIPWE, 2013).</p> <p>The intertidal areas are dominated by the wave-tolerant brown algae bull-kelp, while the shallow reefs support a variety of other brown algae, including strap weed and cray weed. In deeper, calmer waters, communities of common kelp and a variety of red seaweeds thrive. In the very deep waters, where insufficient light prevents algal growth, massive granite boulders are covered in a vibrant patchwork of invertebrates, including sponges, sea whips, sea fans, sea tulips, zoanthsids, anemones, bryozoans and hydroids (DPIPWE, 2013).</p> <p>Fish are abundant and include the longsnout boarfish, banded morwong, old wife, shaws cowfish and schools of butterfly perch. Caves are crowded with bullseyes, cardinal fish and sandpaper fish, and the occasional draughtboard shark. Governor Island supports one of Tasmania's largest colonies of crested tern (DPIPWE, 2013).</p>

Name	Description
<p>Kent Group National Park</p>	<p>The six islands and islets of the Kent Group (Erith, Dover, Deal, North East Isle, South West Isle and Judgement Rocks) comprise Tasmania's northernmost National Park. Surrounding the largest of the islands, the Kent Group Marine Reserve covers 29,000 ha of marine habitat including deep and shallow reefs as well as extensive sponge beds (TPWS, Kent Group Marine Reserve, 2017).</p> <p>The waters around the Kent Group include the southernmost strongholds of several fish species including the violet roughy, mosaic leatherjacket and Wilson's weedfish, and the southern limit of distribution of Maori wrasse, one spot puller and Bank's shovelnose. The Marine Protected Area is made up of a sanctuary zone which is a 'no take' zone, and a habitat protection zone which allows for lower impact fishing (e.g. abalone and rock lobster fishing, hand line fishing).</p> <p>The North East Isle is a 32.62 ha unpopulated granite island with a peak elevation of 125 m above sea level. Recorded breeding seabird and wader species include little penguin, Short-tailed shearwater, Fairy prior, Common diving petrel, Pacific gull and Sooty oystercatcher (Brothers, 2001).</p>
<p>Marriott Reef Conservation Area</p>	<p>The Marriott Reef Conservation Area covers an area of 0.16 km² of the marine environment and begins 500 m off the west coast of Flinders Island. The Area is designated IUCN Category V and there is no management plan in place.</p>
<p>Moriarty Rocks Nature Reserve</p>	<p>Moriarty Rocks Nature Reserve comprises two major rocks and several smaller ones in a reef formation. The more northerly rock is about 1.32 ha in area and its southerly neighbour about 1.22 ha (DPIPWE, 2000).</p> <p>Moriarty Rocks Nature Reserve is the only Australian fur seal (<i>Arctocephalus pusillus</i>) breeding colony in the Furneaux Group. The two rocks which make up the reserve are constantly wave-washed which accounts for the large variation in the numbers of seal pups counted annually. Over the past ten years in which the monitoring program has been conducted, there have been fluctuations in seal pup numbers, ranging from 397 to 1,190 (DPIPWE, 2000).</p>
<p>Reef Island Conservation Area</p>	<p>There is a scarceness of information regarding this conservation area online. However, according to the Tasmania Parks and Wildlife Service listing (2022) the Reef Island Conservation Area is 7 ha and is designated IUCN Category VI. There is currently no management plan in place.</p>
<p>Unnamed (Badger Corner) Conservation Area</p>	<p>There is a scarceness of information regarding this conservation area online. However, according to the Tasmania Parks and Wildlife Service listing (2022) the Unnamed (Badger Corner) Conservation Area is 0.13 ha and is designated IUCN Category IV. There is currently no management plan in place.</p>
<p>New South Wales (see Figure 1-11)</p>	
<p>Batemans Marine Park</p>	<p>The Batemans Marine Park was established in 2006 and covers approximately 85,000 ha, extending from the north end of Murramarang Beach near Bawley Point to Wallaga Lake in the south. It includes all of the seabed and waters from the mean high water mark on the coast to three nautical miles offshore. Including all estuaries, creeks, rivers and lakes (except Nargal Lake) to the limit of tidal influence.</p> <p>Scuba diving, snorkelling, beach going, whale, seal and other wildlife watching, fishing, swimming, surfing, and boating are all popular pastimes at this park. The park covers a range of habitats, including continental shelf seafloor along with sponge gardens, beaches,</p>

Name	Description
	<p>rocky shores, kelp beds, coralline algal banks, rocky reefs, islands, seagrass, mangroves, and estuarine habitats.</p> <p>The Montague Island Nature Reserve, within the Marine Park, is a breeding and nesting place for over 40,000 sea birds including shearwaters, little penguins, crested terns and silver gulls and is a haul out site for Australian and New Zealand fur seals. Both Montague Island and the Tollgate Islands (also within the park) are aggregation sites for grey nurse sharks (DPI, 2018).</p>
<p>Boat Harbour Aquatic Reserve</p>	<p>Boat Harbour Aquatic Reserve is located on the southern part of the Kurnell peninsula, incorporating the whole of Merries Reef and extending east to three green 'Water Board' vents at Potter Point. The seaward boundary is 100 m from the mean low water mark. It covers an area of approximately 70 ha.</p> <p>Boat Harbour is relatively isolated location. The reserve encompasses the whole of Pimweli Rocks and Merries Reef. It contains a sandstone shore and other important marine habitats including boulder and subtidal reefs interspersed with areas of sandy seabed. The rocky shore provides a feeding ground for a number of shorebirds, including threatened species such as sooty oystercatchers and migratory waders (DPI, Boat Harbour Aquatic Reserve, 2023a).</p>
<p>Bronte-Coogee Aquatic Reserve</p>	<p>Bronte-Coogee Aquatic Reserve is located on Sydney's eastern beaches extending from the southern end of Bronte Beach to the rock baths at Coogee Beach and out to 100 m offshore. It covers an area of approximately 40 ha and includes 4,000 m of coastline.</p> <p>Bronte-Coogee Aquatic Reserve is centred on the extensive rocky shores and nearshore reefs of Sydney's Eastern Suburbs. Two small bays, Gordons Bay and Clovelly Bay, are important features of the reserve. Gordons Bay has a rocky wall drop off which is home to a diversity of marine life. A rocky breakwater exists at the mouth of Clovelly Bay creating very calm conditions.</p> <p>The blue groper (<i>Achoerodus viridis</i>) has an iconic status within the eastern suburbs community, and in this reserve recreational divers and snorkelers enjoy swimming with the local groper population. The blue groper has been afforded extra protection through a fishing closure in part of the reserve. The reserve is also home to a variety of invertebrate species, including unusual assemblages living under boulders such as chitons, starfish, and flatworms (DPI, 2023b).</p>
<p>Bushrangers Bay Aquatic Reserve</p>	<p>Bushrangers Bay Aquatic Reserve is a small rocky embayment at the eastern end of Bass Point, approximately 4 km south of Shellharbour on the NSW south coast. The Reserve covers the entirety of Bushrangers Bay, an area of approximately 4 ha.</p> <p>The Reserve was declared for its representation of rock platforms, crevices, and rock pools typical of the NSW mid south coast and in recognition of the Reserve's unique habitat and role as a nursery area located between temperate and tropical regions.</p> <p>The Aquatic Reserve's diverse marine life includes common temperate and seasonal tropical fish, many of which are quite abundant in the Reserve. Seagrass beds provide habitat for a variety of fish, including halfbanded seaperch (<i>Hypoplectrodes maccullochi</i>), southern maori wrasse (<i>Ophthalmolepis lineolatus</i>) and senator wrasse (<i>Pictilabrus laticlavus</i>). These fish, together with a suite of other species, including red morwong (<i>Cheilodactylus fuscus</i>), striped trumpeter (<i>Latris lineata</i>), blue groper (<i>Achoerodus viridis</i>), horseshoe and pygmy leatherjackets (<i>Meuschenia hippocrepis</i> and <i>Brachaluteres jacksonianus</i>) and herring cale (<i>Odax cyanomelas</i>), forage between the seagrass and the variety of other habitats found within the Reserve. The Reserve is also the southernmost distribution for several species of tropical fish (DPI, 2023c).</p>

Name	Description
<p>Cabbage Tree Bay Aquatic Reserve</p>	<p>Cabbage Tree Bay Aquatic Reserve is located at Manly. It covers an area of approximately 20 ha, including the entire bay, rocky shores, and beaches from the southern end of Manly Beach to the northern end of Shelly Beach Headland.</p> <p>Cabbage Tree Bay Aquatic Reserve includes seven main types of habitats: sandy beaches, rocky shores, rocky reefs, kelp, seagrass beds, sandy seabed and open water.</p> <p>More than 160 species of fish have been recorded in the Reserve. These fish species range from common temperate species through to tropical species that move south on the East Australian Current (EAC). Various species use the Reserve, including pelagic species that range widely, such as dusky whaler sharks, and sedentary species that would rarely leave the Reserve. Iconic species such as blue groper, cuttlefish and wobbegong sharks inhabit the Reserve and protected species such as seadragons, elegant wrasse and black rockcod also occur here.</p> <p>The rocky shore has a diversity of habitats and associated marine life, including examples of each of the five types of habitats described for NSW rocky shores (platform, crevice, rock-pool, boulder and cobble habitats). Approximately 50 species of marine invertebrates have been recorded in the Reserve (DPI, 2023d).</p>
<p>Cape Banks Aquatic Reserve</p>	<p>Cape Banks Aquatic Reserve is located on the northern headland of Botany Bay and extends along the whole foreshore from the bridge at Cape Banks to the Endeavour Light at Henry Head and 100 m seaward from the mean low water mark. It covers an area of approximately 20 ha. The reserve is surrounded by the Kamay Botany Bay National Park and the NSW Golf Course, which provide a substantial buffer from human influences and ensure the naturalness of the reserve is maintained.</p> <p>A range of rocky intertidal habitats occur at Cape Banks, including platforms, crevices, rock pools, boulders, and cobbles, resulting in a diversity of intertidal marine plant and animal communities (DPI, 2023e).</p>
<p>Jervis Bay Marine Park</p>	<p>Jervis Bay Marine Park on the NSW South coast covers approximately 215 km² and spans over 100 km of coastline and adjacent oceanic and estuarine waters. It extends from Kinghorn Point south to Sussex Inlet. It includes most of the waters of Jervis Bay, with the remainder forming part of the Booderee National Park on Bherwerre Peninsula. It contains the tidal waters of Currumbene Creek, Moona Creek, Carama Inlet, Wowly Gully, Callala Creek and Currarong Creek, and the mean high-water mark along the shores.</p> <p>The marine park has six estuaries, excluding Jervis Bay, four small coastal creeks and two larger, wave-dominated estuaries. Four seagrass species are abundant making it an important nursery for fish and providing food and shelter for recreationally and commercially valuable species such as snapper, bream, luderick, whiting and flathead.</p> <p>The rocky shores are important roosting and feeding grounds for shorebirds including the threatened sooty oystercatcher. Shallow and intermediate reefs support a wide range of biodiversity, including habitat for commercially and recreationally valuable fish and for invertebrates such as cuttlefish, crabs, and rock lobsters.</p> <p>The park contains important habitat for the endangered grey nurse shark. Protected species known to occur in the park include the eastern blue devilfish, elegant wrasse, black rockcod, some hard and soft corals, sea anemones, zooanthids, and all pipefishes and seahorses. Pied and sooty oystercatchers, hooded plovers and ospreys are among the threatened bird species known to nest, roost and/or feed on the rocky shores. Humpback and southern right whales are often spotted during migration and are an important tourist attraction. Indigenous people have strong ties to the land with midden sites located in areas around the marine park. Nine shipwrecks have been found in Jervis Bay (DPI, 2023f).</p>

Name	Description
<p>Long Reef Aquatic Reserve</p>	<p>Long Reef Aquatic Reserve is the oldest aquatic reserve in NSW. It was declared in 1980 to conserve the diversity of seashore plants, animals, and habitats. The reserve is an important place for marine education and research. The reserve covers an area of approximately 80 ha. Its boundaries extend along the shore from Collaroy rock baths south to Long Reef Surf Lifesaving Club and out to 100 m offshore.</p> <p>A range of flora and fauna occur within the reserve, including, sea urchins, sea stars, cunjevoi, sea snails, barnacles, anemones, blue-ringed octopus, chitons, shrimps, seagrass, flatworms, octopus, sponges and much more (DPI, 2023g).</p>
<p>Lord Howe Island Marine Park</p>	<p>The Lord Howe Marine Park contains a unique mix of warm tropical and cool temperate ocean currents that are home to over 500 fish species, more than 90 coral species and countless other marine species, many only found in the immediate area. A wide range of habitats include a barrier coral reef and lagoon, and fringing reefs dominated either by coral or macroalgal communities. The marine park shares the same values as described in section 1.1.1.</p>
<p>Narrabeen Aquatic Reserve</p>	<p>Narrabeen Head Aquatic Reserve on Sydney's northern beaches covers an area of approximately 10 ha. It includes the rocky shore between the southern end of Turimetta Beach and the rock baths at Narrabeen Head, and extends 100 m offshore. Narrabeen Head Aquatic Reserve was declared primarily to facilitate educational activities on the rocky shore at this site.</p> <p>The rocky shore is broad and flat, and the rock pools, cracks and crevices provide a variety of habitats for algae, invertebrates and small fish. The reserve is an important area for shorebirds such as the pied cormorant (<i>Phalacrocorax sulcirostris</i>), crested tern (<i>Thalasseus bergii</i>) sooty oystercatchers (<i>Haematopus fuliginosus</i>) (DPI, 2023h).</p>
<p>North Sydney Harbour Aquatic Reserve</p>	<p>North (Sydney) Harbour Aquatic Reserve is located between North Head and Dobroyd Head in the northern part of Sydney Harbour, covering an area of approximately 260 ha.</p> <p>Historically, the reserve was the site of some of the first marine specimen collecting conducted in the 1830s by the superintendent of the Quarantine Station. The aquatic reserve includes a variety of habitats, including rocky shores, sandy beaches, nearshore reefs, sandy seabed, and harbour waters up to around 20 m deep.</p> <p>Sheltered coves contain seagrass habitats and nearshore reefs support kelp habitats that are used by many species, including seahorses and sea dragons. The rocky reefs and kelp beds are also home to many different invertebrates and fish and the boulder habitats in deeper waters are inhabited by colourful sponges and corals. In summer, tropical fish are a common sight, carried from the Great Barrier Reef along the NSW coast by the East Australian Current (EAC) (DPI, 2023i).</p>
<p>Port Stephens - Great Lakes Marine Park</p>	<p>Port Stephens–Great Lakes Marine Park extends from Cape Hawke near Forster south to Birubi Beach at the northern end of Stockton Beach. The Marine Park is approximately 980 km.</p> <p>The marine park contains a diverse range of habitats, including beaches, seagrass beds, mangroves, saltmarsh, and open waters, which all support distinct groups of plants and animals.</p> <p>The extensive and diverse estuaries and shorelines within the park include remarkable features such as:</p> <p>the state's largest drowned river valley, brackish barrier lake system and intermittently open and closed lake. Broughton Island, the state's second largest island, provides important</p>

Name	Description
	<p>habitat for the threatened Grey nurse shark and black rockcod. Cabbage Tree Island (John Gould Nature Reserve), the primary breeding site for the threatened seabird Gould's petrel.</p> <p>The park offers quality recreational fishing and productive commercial fishing grounds, aquaculture, many popular scuba diving sites, and regionally significant tourism activities such as whale and dolphin watching.</p> <p>Its diverse marine life includes many dolphin, turtle, fish, invertebrate, seabird and seaweed species, and threatened species such as the Gould's petrel, little tern, grey nurse shark, black rockcod and green turtle.</p> <p>A number of significant Aboriginal cultural and spiritual sites within or adjacent to the park include middens, burial sites and traditional campsites. Aboriginal people's association with the sea and land in the area dates back thousands of years and local people still gather food in the traditional way (DPI, 2023j).</p>
<p>Towra Point Aquatic Reserve</p>	<p>Towra Point Aquatic Reserve is the largest NSW aquatic reserve and is located on the southern shore of Botany Bay in Sydney. It stretches from Shell Point on the western side of the Bay to Bonna Point in the east. The aquatic reserve covers an area of approximately 1,400 ha and is divided into two zone types, a refuge zone and a sanctuary zone.</p> <p>The reserve protects one of the largest and most diverse wetland complexes remaining in the Sydney region. The reserve is adjacent to the Towra Point Nature Reserve which is a Wetland of International Importance and a declared Ramsar site. The reserve is an important nursery area for fish and invertebrates, provides important habitat for migratory seabirds and is rich in marine biodiversity.</p> <p>The reserve includes much of the remaining important seagrasses, mangroves, and migratory wading bird habitats in Botany Bay. It represents major nursery habitat supporting commercial and recreational fish stocks in the coastal Sydney region (DPI, 2023k).</p>

1.1.9.2 Coastal Protected Areas

This section lists the coastal protected areas that are within the EMBA.

- Victoria (see Figure 1-9):
 - Anser Island Reference Area
 - Bemm, Goolengook, Arte and Errinundra Rivers
 - **Cape Conran Coastal Park** – This park extends from Sydenham Inlet in the east to Point Ricardo near Marlo. The park includes ocean beaches and is a popular park for water activities – swimming, diving, boating, fishing and rock pooling. Many birds feed on the nectar rich plants of the heathlands and banksia woodlands including the threatened Ground parrot (*Pezoporus wallicus wallicus*). Lizards and large lace monitors are common around Cape Conran (ParksVic, 2017f).
 - Cape Howe Wilderness Zone
 - Cape Liptrap Coastal Park
 - **Croajingolong National Park** – The Croajingolong National Park follows the far-eastern coastline of Victoria for 100 km and together with the adjoining Nadgee Nature Reserve in NSW is classified as a UNESCO World Biosphere Reserve. Over 1000 species of native plants have been recorded in the park including 90 species of orchids. The park also contains areas of cool temperate and warm temperate rainforest, eucalypt forest and coastal heathland. Of the 52 mammal species recorded in the park, arboreal mammals, such as possums, gliders and bats are common. Seals, whales, and dolphins occur in coastal waters adjacent to the park. The islands and ocean beaches attract migratory seabirds and waders, the wetlands are habitat for a diversity of waterfowl and the coastal woodlands are favoured habitat for birds of prey; the Nadgee Lake and tributary wetlands are a recognised Nationally Important Wetland. Significant populations of reptiles and amphibians also

occur within the park. The park's secluded coastal camping locations make it popular for beach walks, bird watching, boating and fishing (ParksVic, 2017g).

- East Gippsland Coastal streams
- Entrance Point Reference Area
- Ewing Morass Natural Features Reserve
- **Gippsland Lakes Coastal Park** – The Gippsland Lakes are a group of large coastal lagoons in eastern Victoria, separated from the sea by sand dunes and fringed on the seaward side by Ninety Mile Beach. The main lakes – Wellington, Victoria and King cover an area of 340 km² and have a shoreline of 320 km. The lakes are fed by a number of river systems. The largest of the rivers are the Latrobe River and the Avon River (flowing into Lake Wellington), and the Mitchell River, Nicholson River and Tambo River (flowing into Lake King). The system is linked to the sea by an artificial entrance near the eastern end, opened in 1889, where the town of Lakes Entrance is now situated (ParksVic, 2017h) (ParksVic, 2017i).
- Jack Smith Lake W.R Natural Features Reserve
- **Lake Tyers S.P. State Park** – Ewing Morass Wildlife Reserve and Lake Tyers State Park are located along Pettmans Beach, approximately 20 km east of Lakes Entrance. It is an extensive sandy beach, frequented by campers and fishers. The area is highly significant to Gunaikurnai Traditional Owners due to its Aboriginal cultural heritage (ParksVic, 2023).
- Mount Vereker Creek
- Rame Head Remote and Natural Area
- Sandpatch Wilderness Zone
- Seal Islands W.R. Nature Conservation Reserve
- Snowy River
- Southern Wilsons Promontory Remote and Natural Area
- Vereker Creek Reference Area
- Wilsons Promontory National Park
- Wilsons Promontory Islands Remote and Natural Area
- Tasmania (see Figure 1-10):
 - Albatross Island Nature Reserve
 - Anderson Islands Conservation Area
 - Anderson Islands Conservation Area
 - Ansons Bay Conservation Area
 - Babel Island Indigenous Protected Area
 - Badger Island Indigenous Protected Area
 - Bass Pyramid Nature Reserve
 - Battery Island Conservation Area
 - Bay of Fires Conservation Area
 - Baynes Island Nature Reserve
 - Big Green Island Nature Reserve
 - Bird Island Game Reserve
 - Blyth Point Conservation Area
 - Boxen Island Conservation Area
 - Briggs Islet Conservation Area
 - Bun Beetons Point Conservation Area
 - Cape Portland Conservation Area
 - Cat Island Conservation Area
 - Chalky Island Conservation Area
 - Cone Islet Conservation Area
 - Craggy Island Conservation Area
 - **Curtis Island Nature Reserve** – Curtis Island, part of the Curtis Group, is a granite island with an area of 150 ha lying in northern Bass Strait between the Furneaux Group and Wilsons Promontory. It is a nature reserve and supports up to 390,000 breeding pairs of Short-tailed shearwaters. Other recorded breeding seabird and wader species include little penguin, Fairy prion, Pacific gull and

Sooty oystercatcher. Other islands in the Curtis Group are Cone Islet, Sugarloaf Rock and Devils Tower. Devils Tower comprises two small granite islands with a combined area of 4.77 ha. It is a nature reserve and recorded breeding seabird species include Short-tailed shearwater, Fairy prion and Common diving-petrel. The island is also used as a regular haul-out site for Australian fur seals (Brothers, 2001).

- **Devils Tower Nature Reserve** – see description above.
- Diamond Island Nature Reserve
- Double Sandy Point Conservation Area
- Doughboy Island Conservation Area
- East Kangaroo Island Nature Reserve
- **East Moncoeur Island Conservation Area** – West Moncoeur Island and East Moncoeur Island are part of Tasmania's Rodondo Group lying in northern Bass Strait south of Wilsons Promontory. The islands are granite islands ringed by steep cliffs. Recorded breeding seabird and wader species include little penguin, Short-tailed shearwater, Fairy prion, Common diving petrel, Pacific gull and Sooty oystercatcher. Both islands are considered important breeding sites for seabirds (Brothers, 2001). West Moncoeur Island holds an important breeding colony of Australian fur seals and is a nature reserve (DPIPWE, 2000).
- Eddystone Point Lighthouse Historic Site
- Egg Beach Conservation Area
- Emita Nature Recreation Area
- Fannys Bay Conservation Area
- Five Mile Bluff Conservation Area
- Foochow Conservation Area
- Forsyth Island Conservation Area
- Foster Islands Nature Reserve
- Fotheringate Bay Conservation Area
- Four Mile Creek Conservation Area
- Freycinet National Park
- **Furneaux Group** – The Furneaux Group is a group of approximately 100 islands located at the eastern end of Bass Strait, between Victoria and Tasmania (the EMBA intersects with the entirety of the Furneaux group). The islands contain granite from the Devonian period, as well as unconsolidated limestone and sand from Cenozoic periods and are generally mountainous with rugged coastlines. The islands are home to numerous seabirds including albatross, petrels, cormorants and curlews. It contains the Franklin Sound Islands Important Bird Area and the islands support breeding seabird and wader species such as the little penguin, black cormorants, Pacific gull, Caspian terns, sooty oystercatcher and pied oystercatcher. Some of the islands are known to be haul out sites for Australian fur seals. The largest islands in the group are Flinders Island, Cape Barren Island, Clarke Island and Chappell Island. Other islands include: Anderson Island, Babel Island, Badger Island, Bass Pyramid, Battery Island, Billy Goat Reefs, Big Green Island, Boxen Island, Briggs Islet, Cat Island, Chalky Island, Cooties Reef, Doughboy Island, East Kangaroo Island, Fisher Island, Fisher Island Reef, Forsyth Island, Great Dog Island, Inner Sister Island, Outer Sister Island, Isabella Island, Little Anderson Island, Little Chalky Island, Little Dog Island, Little Green Island, Long Island, Low Islets, and another of the same name Low Islets, Middle Pasco Island, Mile Island, Moriarty Rocks, Mount Chappell Island, Neds Reef, Night Island, North Pasco Island, Passage Island (Tasmania), Pelican Island, Prime Seal Island, Puncheon Island, Puncheon Islets, Roydon Island, Rum Island, Samphire Island, Sentinel Island, South Pasco Island, Spences Reefs, Spike Island, Storehouse Island, Swan Island, Tin Kettle Island, Vansittart Island.
- George Rocks Nature Reserve
- Goose Island Conservation Area
- Granite Point Conservation Area
- Great Dog Island Indigenous Protected Area
- Gull Island Conservation Area
- **Hogan Group Conservation Area** - Hogan Island, the largest island in the Hogan Group, is a 232 ha granite island located in northern Bass Strait between the Furneaux Group and Wilsons Promontory. Recorded breeding seabird and wader species include little penguin, Short-tailed

shearwater, Pacific gull, Silver gull and Sooty oystercatcher (Brothers, 2001). Other islets of the Group include: Twin, Long, Round, East, Boundary (or North East) islets, and Seal Rock.

- Holts Point Conservation Area
- Humbug Point Nature Recreation Area
- **Hunter Island Conservation Area** - The Hunter Group of Islands is a group of 13 islands which lay off the north-west tip of Tasmania in Bass Strait. The two largest islands are Hunter Island and Three Hummock Island, and they are surrounded by many smaller islands including Albatross Island, Kangaroo Island (Tasmania), Bird Island and Stack Island. The group supports large numbers of migratory and seabirds. The endangered Northern Royal Albatross, southern Giant Petrel and Grey-headed Albatross are only some of the listed migratory species. The Critically endangered Great Knot and endangered Sand Plover are known to roost on the islands. The Critically endangered Curlew Sandpiper and Eastern Curlew are known to occur in the area and the islands are breeding and feeding or foraging areas for many other threatened bird species (DoEE, 2019). The Hunter Group of Island is listed as an Important Bird Area by Birdlife International, formerly the International Council for Bird Preservation.
- Isabella Island Nature Reserve
- Jacksons Cove Conservation Area
- Killiecrankie Nature Recreation Area
- Lackrana Conservation Area
- Lagoons Beach Conservation Area
- Lands End Conservation Covenant
- Lighthouse Point Conservation Area
- Little Beach Conservation Area
- Little Chalky Island Conservation Area
- Little Dog Island Game Reserve
- Little Green Island Conservation Area
- Little Island Conservation Area
- Little Swan Island Nature Reserve
- Little Waterhouse Island Nature Reserve
- **Logan Lagoon Conservation Area** – Also a Ramsar site see section 1.1.4.4 for description.
- Logans Lagoon Conservation Covenant
- Long Island Conservation Area
- Low Islets Nature Reserve
- Low Point Conservation Area
- Lungatalanana Indigenous Protected Area
- Marshall Beach Conservation Area
- McDonalds Point Conservation Area
- Mile Island Conservation Area
- Mount Chappell Island Indigenous Protected Area
- Mount Tanner Nature Recreation Area
- **Mount William National Park** - Mount William National Park located in the far north-east corner of Tasmania is an important area for the conservation of Tasmania's coastal heathlands and dry sclerophyll plants. Being a coastal park, Mount William is an excellent area for observing sea birds. Gulls, terns, gannets, and albatrosses can be seen, as well as both the Pied and Sooty oystercatcher. Although not common, both the White-bellied sea eagle and the Wedge-tailed eagle can sometimes be spotted soaring overhead. Mount William is also the first and last stop off point for some migratory birds such as shearwaters (TPWS, 2014).
- Musselroe Bay Conservation Area
- Nares Rocks Conservation Area
- Neds Reef Conservation Area
- Night Island Conservation Area
- Ninth Island Conservation Area
- North East Islet Nature Reserve
- North East River Game Reserve

- Oyster Rocks Conservation Area
- Paddys Island Nature Reserve
- Palana Beach Nature Recreation Area
- Pasco Group Conservation Area
- Passage Island Conservation Area
- Patriarchs Conservation Area
- Penguin Islet Nature Reserve
- Prime Seal Island Conservation Area
- Ram Island Conservation Area
- Rodondo Island Nature Reserve
- Roydon Island Conservation Area
- Scamander Conservation Area
- Sellars Lagoon Game Reserve
- Sentinel Island Conservation Area
- Settlement Point Conservation Area
- Seymour Conservation Area
- Single Tree Plain Conservation Area
- Sister Islands Conservation Area
- Spike Island Conservation Area
- St Helens Conservation Area
- Storehouse Island Conservation Area
- **Strzelecki National Park** – Strzelecki National Park is located on Mount Strzelecki which is the highest point on Flinders Island. The park has distinctive granite peaks that offer spectacular views, a rich variety of flora and fauna, and beautiful coastal waters, Strzelecki National Park is an ideal spot for walkers, birdwatchers and kayakers. There are well over 100 bird species recorded on the Island, none more prominent than the Cape Barren goose. Many rare or endangered species inhabit the Island, such as the swift parrot, forty-spotted pardalote, grey-tailed tattler and the hooded plover. The park is also home to a large number of endemic species, you can expect to see wombats, Bennetts wallabies, echidnas and pademelons as you explore the park. There are also long-nosed potoroos (TPSW, 2022).
- Sugarloaf Rock Conservation Area
- Sydney Cove Historic Site
- Tenth Island Nature Reserve
- The Dock Conservation Covenant
- Three Hummock Island State Reserve
- Trousers Point Beach Conservation Area
- Vansittart Island Conservation Area
- Waterhouse Conservation Area
- Waterhouse Island Conservation Area
- Waubadebars Grave Historic Site
- **West Moncoeur Island Nature Reserve** – West Moncoeur Island and East Moncoeur Island are part of Tasmania's Rodondo Group lying in northern Bass Strait south of Wilsons Promontory. The islands are granite islands ringed by steep cliffs. Recorded breeding seabird and wader species include little penguin, Short-tailed shearwater, Fairy prion, Common diving petrel, Pacific gull and Sooty oystercatcher. Both islands are considered important breeding sites for seabirds (Brothers, 2001). West Moncoeur Island holds an important breeding colony of Australian fur seals and is a nature reserve (DPIPWE, 2000).
- White Beach Conservation Area
- Wright Rock Nature Reserve
- Wybalenna Island Conservation Area
- New South Wales (see Figure 1-11):
 - **Awabakal Nature Reserve** - Awabakal Nature Reserve to the south of Glenrock State Conservation Area has similar values to Glenrock. The Redhead Lagoon provides one of the most

important sources of information on the vegetation history of eastern Australia through the last full glacial–interglacial cycle.

- Both areas are important habitat for the threatened terrestrial birds and mammal species. The proximity of the area (8 km Newcastle city) makes the area highly used areas for educational and recreational purposes (NPWS, 2014a).
- Belowla Island Nature Reserve
- Ben Boyd National Park
- Biamanga National Park
- Bird Island Nature Reserve
- **Booderee National Park** – Booderee National Park stretches across 6,379 ha at the southern section of Jervis Bay on the south coast of NSW and includes 875 ha of marine environment with values similar to those in Jervis Bay Marine Park. Booderee National Park is owned by the Wreck Bay Aboriginal Community and is jointly managed with Parks Australia. The Yuinpeople have a strong and continuing connection to the Jervis Bay area. The park includes Bowen Island which has a sanctuary zone on the west coast to protect nesting seabirds and their habitat from disturbance. The marine environment has a habitat protection zoning designed to safeguard sensitive, rare and endangered habitats, including littoral areas and seagrass beds (PA, 2019).
- Boondelbah Nature Reserve
- **Booti Booti National Park** – Booti Booti National Park is 1566 ha park, approximately 10 km long, 3.25 km wide at its widest point and 400m wide at its narrowest. It's a peninsula which runs between the Forster town in the North and Charlotte Head in the south and separates the ocean from Wallis Lake, which is a nationally important wetland. The park consists of what was three hill, island complexes that have been joined to the mainland through deposited sand. The dominant plant community is dry, subtropical rainforest and also includes Littoral rainforest as well as other plant communities (Griffith, 2014). Its estuarine waters provide habitat to over 200 bird species including the endangered little tern (NPWS, 2019a).
- **Bouddi National Park** – Broken Bay, 46 km north of Sydney has three national parks at its entrance and is also the mouth of the Hawksbury River. Bouddi is at the north headland and comprises approximately 1,532 ha and one of the first marine parks to extend down to the low water mark and therefore one of the first marine protected areas (NPWS, 2019b). Brisbane Waters National Park comprises approximately 11,506 ha. Both parks are significant in their representation of sandstone parks, coastal habitats and communities typical of the Sydney region. They are important in that together with the Ku-ring-gai Chase National Park on the south of the bay, also a National Heritage listed place, they are a part of a system of reserves which protects the State and regionally significant waterways of the lower Hawkesbury River, Broken Bay, Pittwater and Brisbane Waters. The extensive areas covered by the three parks support a diverse range of communities which support native floral and faunal species. The parks also contain a large number of significant indigenous sites and representations of Sydney rock art (NPWS, 1992). With their proximity to suburban Sydney they are popular tourist and recreational locations.
- **Bournda National Park** – Bournda has been a special place for the Dhurga and Yuin people for thousands of years and its name means 'place of tea tree and kangaroos'. The estuarine wetlands provide roosting and feeding areas for a large variety of waders and waterfowl including threatened species such as Little tern, Hooded plover and Pied oystercatcher (NPWS, 2023a).
- **Broulee Island Nature Reserve** – Broulee Island Nature Reserve is located on the South Coast of NSW and covers the entire 43 ha of Broulee Island to mean high water mark. Broulee Island Nature Reserve contains a vegetation succession from mangroves on the shoreline rock platforms to an open forest dominated by southern mahogany on the plateau. The shoreline and adjacent waters are utilised by a number of seabird species, none of which are known to breed on Broulee Island; these include shearwaters, cormorants, gulls (OEH, 2008).
- Brush Island Nature Reserve
- Comerong Island Nature Reserve
- **Conjola National Park** – Located in the mid coast of NSW the Conjola National Park covers 11,060 ha including forests, woodlands, rainforest, coastal scrub and wetlands and four endangered ecological communities: Coastal Saltmarsh; Swamp Sclerophyll Forest (important feeding); Swamp Oak Floodplain Forest and Bangalay Sand Forest. 429 plant species are represented, five of which

are threatened. Twenty five species of threatened fauna occur in the park. Of these the regent honeyeater (*Xanthomyza phrygia*), swift parrot (*Lathamus discolor*), little tern (*Sterna albifrons*), hooded plover (*Thinornis rubricollis*) and green and golden bell frog (*Litoria aurea*) are endangered. High diversity and occurrence of Aboriginal sites including middens, campsites, rock shelters and grinding grooves. A number of heritage features are located in the park including a burial and monument for the 1870 shipwreck of the Walter Hood (NPWS, 2023b).

- Cullendulla Creek Nature Reserve
- Eagles Claw Nature Reserve
- **Eurobodalla National Park** – Eurobodalla National Park contains a range of aquatic environments including lagoons, lakes, estuaries, sheltered and wild beaches that protect a wide variety of plants and animals. The National Park provides an important habitat for a wide variety of birds with 131 bird species having been recorded in the park. Estuaries and headlands are important over-wintering areas for migratory birds, including 17 species of waders, and the Hooded plover and Little tern nest on the sand islands, sand spits and dunes. Water based activities such as boating, fishing and swimming are all popular in the park (NPWS, 2023c).
- **Five Islands Nature Reserve** – Five Islands Nature Reserve includes five small islands clustered off the coast of Port Kembla, immediately south of the city of Wollongong within the Wollongong Local Government Area. The islands are clustered between approximately 0.5 km and 3.5 km off the coast. The main values of the islands include evidence of geological and geomorphologic processes related to the formation of the Sydney Basin and subsequent landscape evolution, habitat and breeding sites for the sooty oystercatcher (*Haematopus fuliginosus*), breeding sites for the wedge-tailed shearwater (*Puffinus pacificus*), the shorttailed shearwater (*Puffinus tenuirostris*) and habitat for the white-bellied sea-eagle (*Haliaeetus leucogaster*), importance to the Aboriginal community due to continuing cultural associations and past occupation of the area, Listed Nationally Important Wetland.
- **Glenrock State Conservation Area** – Glenrock State Conservation Area of 534 ha is significant as it contains ten nationally significant vegetation communities, including lagoon (Glenrock Lagoon) and the threatened ecological community of littoral rainforest. The conservation area contains many cultural records, both Aboriginal and European, and is located within the Awabakal Local Aboriginal Land Council area (NPWS, 2010). The area is important habitat for the threatened terrestrial birds and mammal species. The proximity of the areas (15km to Newcastle city) makes the area highly used areas for educational and recreational purposes (NPWS, 2014a).
- Jervis Bay National Park
- **Kamay Botany Bay National Park** – Located within the Sydney metropolitan area, Kamay Botany Bay National Park (or Botany Bay National Park) covers approximately 456 ha of the northern and southern headlands of the entrance to Botany Bay and includes over 13 km of coastline. As discussed in the section on National Heritage (1.1.2.3) the park includes the Kurnell Peninsula and Botany Bay botanical sites, listed National Heritage Places. It is also renowned for the place of arrival of the French expedition under the command of Jean-Francois de Galaup, Comte de Laperoise in 1788 before the departure of the first fleet. Laperoise stayed in Botany Bay for six weeks and built a stockade, observatory and a garden for fresh produce on the La Perouse peninsula before leaving and not seen again. The association of the park with the history of the European exploration and the botanical collection of native plants by Banks and Solander are the two most prominent values, however, together with those is the symbolism of the meeting of the Indigenous and European cultures and the historical social issues that have developed from that and the opportunity to further explore current social issues such as reconciliation (NPWS, 2016). The retention of the largest remnants of the original vegetation communities of the Kurnell Peninsula and Eastern Suburbs and prominent scenic coastal headlands at the entrance to Botany Bay are also defined as core values of the park. The park is also part of a broader network of conservation areas in the region that provide secure protection for native plants and animals, sites of Aboriginal and historic heritage value and recreational opportunities for a growing population. On the southern Headland, the park abuts the Caltex fuel import terminal on the inland side of the park (NPWS, 2018).
- Little Broughton Island Nature Reserve

- **Lord Howe Island Permanent Park Preserve** – Lord Howe Island Permanent Park Preserve includes a major part of the Lord Howe Island Group but excludes the settlement areas of the island (residential and tourist accommodation and agricultural lands). Whereas a National Park does not allow any harvesting, the management of the Preserve allows for sustainable harvesting of some natural resources, in this case mainly palm seeds. Lord Howe is listed as World Heritage (refer to section 1.1.1.1) for its exceptional natural beauty and for a place which has habitats where populations of rare or endangered species of plants and animals still survive. The Lord Howe Island Group forms one of the major seabird breeding sites in the Tasman Sea and is thought to be home to the most diverse and largest number of seabirds in Australia, 34 bird species regularly breed on the island. The summit and slopes of Mt Lidgbird and Mt Gower support almost the entire breeding population of the marine bird, providence petrel (*Pterodroma solandri*); the only known breeding locality in Australasia of the grey ternlet (*Procelsterna cerulea*) and vulnerable Kermadec petrel (*Pterodroma neglecta neglecta*); and the southernmost breeding locality in the world for the threatened masked booby (*Sula dactylatra tasmani*), sooty tern (*Sterna fuscata*) and common noddy (*Anous stolidus*) (DECC, 2010a).
- **Malabar Headland National Park** – The Malabar headland, located in Malabar, 12 km south of Sydney, is a 177 ha park which has dramatic sandstone cliffs and provides spectacular coastal views. The western and eastern sections of the headland contain rare examples of the once extensive Port Jackson mallee scrub (*Eucalyptus obstans*, formerly *Obtusiflora*). Malabar headland also contains one of the largest, continuous remnants of the endangered ecological community listed as Eastern Suburbs Banksia Scrub. The site is a renowned site for viewing seabirds and marine mammals, in particular the white bellied sea eagle and the humpback whale (NPWS, 2014b). The headland also has indigenous heritage significance and includes shell middens that can be seen today.
- **Meroo National Park** – Meroo National Park is 3,731 ha of coastline, coastal lakes and inland forested areas located 5 km south of Ulladulla on the NSW south coast. High conservation values are attributed to the coastal lakes included in the park (Termeil, Tabourie and Wairo Beach Lagoon) and the foreshores and fringing wetlands of the adjoining lakes (Meroo, Burrill and Willinga Lakes). As per the Narrawallee Creek Nature Reserve it includes endangered ecological communities Swamp Oak Floodplain Forest (*Casuarina glauca* – *Melaleuca ericifolia*), Coastal Saltmarsh, Littoral Rainforest, Bangalay Sand Forest (*E. botryoides* – *Banksia serrata*) and Themeda Grassland on Seacliffs and Coastal Headlands. At least 12 threatened fauna species including significant populations of the nationally endangered green and golden bell frog (*Litoria aurea*) have been recorded here. The park also has indigenous and recreational values due to mythological sites and a range of bush camping locations (NPWS, 2023d).
- **Mimosa Rocks National Park** – Mimosa Rocks National Park takes its name from the Paddle Steamer Mimosa that wrecked in 1863 after running aground on rocks at the northern end of the park. The rocks of the park have distinctive castle-like features that are the result of geological folds, faults and intrusions. The park provides important habitat for many migratory birds, including Hooded plovers and Pied oystercatchers that nest along the coastline. The Bar tailed godwit rests briefly here in summer months during its migration from Alaska to New Zealand. The park is popular for fishing, surfing, snorkelling and birdwatching. From May to November, the headlands are excellent whale watching vantage points (NPWS, 2023e).
- **Montague Island Nature Reserve** – The Montague Island Nature Reserve, within the Batemans Marine Park, is a breeding and nesting place for over 40,000 sea birds including Shearwaters, little penguins, Crested terns and Silver gulls and is a haul out site for Australian and New Zealand fur seals. Both Montague Island and the Tollgate Islands (also within the park) are aggregation sites for Grey nurse sharks.
- Moon Island Nature Reserve
- **Munmorah State Conservation Area** – Munmorah State Conservation Area is on the coast of NSW, approx. 40 km north of Gosford and has an area of 1,515 ha, including 12 km of coastline. A range of vegetation communities including woodlands, open forests, wetlands, coastal tea tree shrubland and coastal heath support diverse fauna including the listed osprey (*Pandion haliaetus*) and sooty oystercatcher (*Haematopus fuliginosus*). The 7.3 ha Bird Island with its steep vertical cliffs is an important nesting and roosting area for seabirds including listed and migratory species

including species of shearwater, godwit, curlew, terns and the arctic jaeger (also known as arctic skua) (*Stercorarius parasiticus*) (NPWS, 2009). To the north of the park is the Wallarah National Park, primarily an inland park of 178 ha with approximately 2 km of coastline. Seabirds and migratory birds found in the Munmorah State Conservation Area may also occur here (NPSW, 2023f).

- **Murramarang National Park** - Murramarang National Park spans 44 km of coastline on the NSW south coast and supports more than 90 species of bird including gannets, shearwaters, White-faced storm petrels, Sooty oystercatchers and little penguins. The forest of spotted gums stretches right to the ocean (NPWS, 2023g). The National Park includes four offshore Islands and encompasses Brush Island Nature Reserve, Belowla Island Nature Reserve and Tollgate Islands Nature Reserve.
- **Myall Lakes National Park** – The extensive waterways including Bombah Broadwater, Boolambayte Lake and Myall Lake are the dominant feature of this park. The Myall Lakes Ramsar site also overlaps with the park (refer Section 1.1.4.7). Its proximity to Newcastle and Forster on the central coast of NSW and the dunes, waterways and 40kms of beach make Myall National Park the most frequently visited National Park in northern NSW. The Myall Coast Reserves include Little Broughton Island (36 ha) and two islands known as Inner Rock and North Rock which together form Stormpetrel Nature Reserve (8 ha). They are located about 3 km offshore near Broughton Island. The three islands are important breeding sites for seabirds, of particular note are the White-bellied Sea Eagle and the Wedge-tailed Shearwater. Little Broughton Island is also recognised as the northern most breeding site for the short-tailed Shearwater (NPWS, 2002).
- Nadgee Nature Reserve
- **Narrawallee Creek Nature Reserve** - Narrawallee Creek Nature Reserve is located on the mid south coast of NSW approximately 7 km north of Ulladulla and covers an area of 878 ha. It includes five endangered ecological communities being Coastal Saltmarsh, Swamp Sclerophyll Forest (dominated by swamp mahogany, an important food source for several threatened fauna including the yellow-bellied glider and grey-headed flying fox), Swamp Oak Floodplain Forest, Littoral Rainforest and Bangalay Sand Forest). Eleven species of threatened fauna recorded, including breeding sites for the little tern, hooded plover and pied oystercatcher. Both indigenous and historical values are placed on the reserve (NPWS, 2023h).
- **Royal National Park** – Royal National Park is a 15,068 ha park situated on the coast of NSW, adjacent to the southern fringe of metropolitan Sydney and about 30 km north of Wollongong. Royal National Park adjoins Heathcote National Park (2,251 ha) to the west and Garawarra State Recreation Area (900 ha) to the southwest. These adjoining parks do not include coastal areas. The parks are significant for many reasons, and these can be partially attributed to their accessibility to suburban Sydney combined with the parks' diversity of natural and cultural heritage which makes for high public profile and visitation rates for recreation, scientific and educational purposes (NPWS, 2000).
- **Seal Rocks Nature Reserve** – Seal Rocks Nature Reserve consists of two exposed low-lying rocks, less than 1 ha in size. It is situated 3 km offshore from Myall Lakes National Park and once supported the most northern rookery of the Australian fur seal in NSW. There are still occasional sightings of Australian fur seals, and suitable habitat also exists for the New Zealand fur seal. Seal Rocks may be used occasionally by little penguins and sea birds. The waters surrounding the reserve are within the Sanctuary Zone of the Port Stephens – Great Lakes Marine Park and the waters around Seal Rocks form a key aggregation site for the endangered grey nurse shark. (Plan of Management Seal Rocks Nature Reserve (NSW OEH, 2014).
- Shark Island Nature Reserve
- Stormpetrel Nature Reserve
- **Sydney Harbour National Park** – Sydney Harbour National Park covers 393 ha of headlands, beaches and islands in and around Sydney Harbour. The park includes six headlands including North Head on the northern side and South Head on the south side. The five islands within the park are Shark Island, Clark Island, Fort Denison, Goat Island and Rodd Island, extending well into the harbour past the Sydney Harbour Bridge. All parts of the park are within suburban Sydney city. Its list of values include historic, conservation values for the protection of native flora and fauna, indigenous heritage, landscape and recreation and tourism (NPWS, 2012).

- Tollgate Islands Nature Reserve
- **Tomaree National Park** – Tomaree National Park is located in the Port Stephens area of NSW, approximately 45 km north of Newcastle and covers an area of approximately 2,310 ha. The park is one of a group of conservation reserves in the Port Stephens area which protect a coastal landscape of regional and state importance. Nearby Nelson Bay is a popular holiday destination for people in Sydney and the park has over 100,000 visitors per year. The park's important values include evidence of important geological events, essential wintering habitat for a variety of birds, conservation of heath communities on volcanic rock (rhyodacite) which have restricted distribution in NSW (NPWS, 2006).
- **Towra Point Nature Reserve** – Located at Kurnell, Botany Bay, in Southern Sydney, Towra Point Nature Reserve is a 603 ha reserve. The site is one of the first contacts between European and Aboriginal peoples, Towra Point is a hugely important place for Australia as we know it today. In April 1770, the Cook expedition explored the area and mapped Towra Lagoon as a source of fresh water. Its fresh drinking water and historical richness in seafood provided an abundant source of food to the indigenous people and the nature reserve is now a dedicated Aboriginal Place. Towra Point Nature reserve forms the largest and most diverse estuarine wetland complex in NSW. Representing around half of the remaining mangrove area near Sydney, and most of the saltmarshes remaining in the region. The abundance of mudflat, fresh water wetlands and sea grass beds, it provides breeding, feeding and roosting sites for many threatened and migratory bird species; Towra Point Estuarine Wetlands are a recognised Nationally Important Wetland. Towra Point can only be accessed by boat or kayak (DECC, 2010b).
- Wallarah National Park
- Wamberal Lagoon Nature Reserve
- **Wyrrabalong National Park** - Wyrrabalong National Park is located on the Central Coast of NSW approximately 105 km north of Sydney. The 620 ha park conserves the largest stands of littoral rainforest and Sydney red gums on the NSW Central Coast as well as significant freshwater wetlands. It also contains six endangered ecological communities (coastal saltmarsh, Littoral rainforest, swap oak and swap sclerophyll forest, freshwater wetlands and themeda grassland), significant habitat for a number of threatened animal species and a variety of Aboriginal sites, including an extensive midden at Pelican Point. The protected lake and foreshore and island provide important habitat for migratory birds and seabirds (NPWS, 2013).

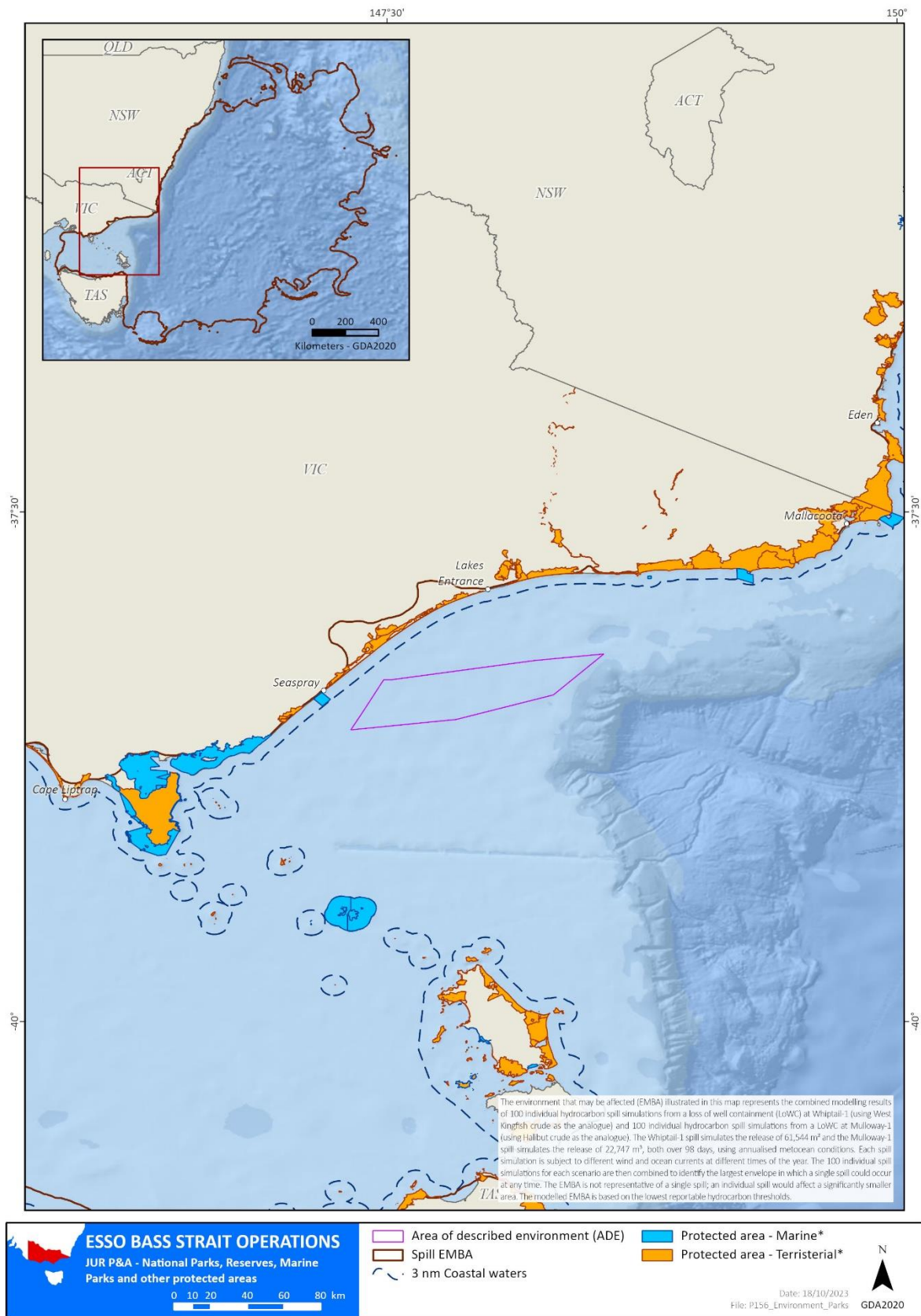


Figure 1-9 Victorian protected areas intersected by the EMBA

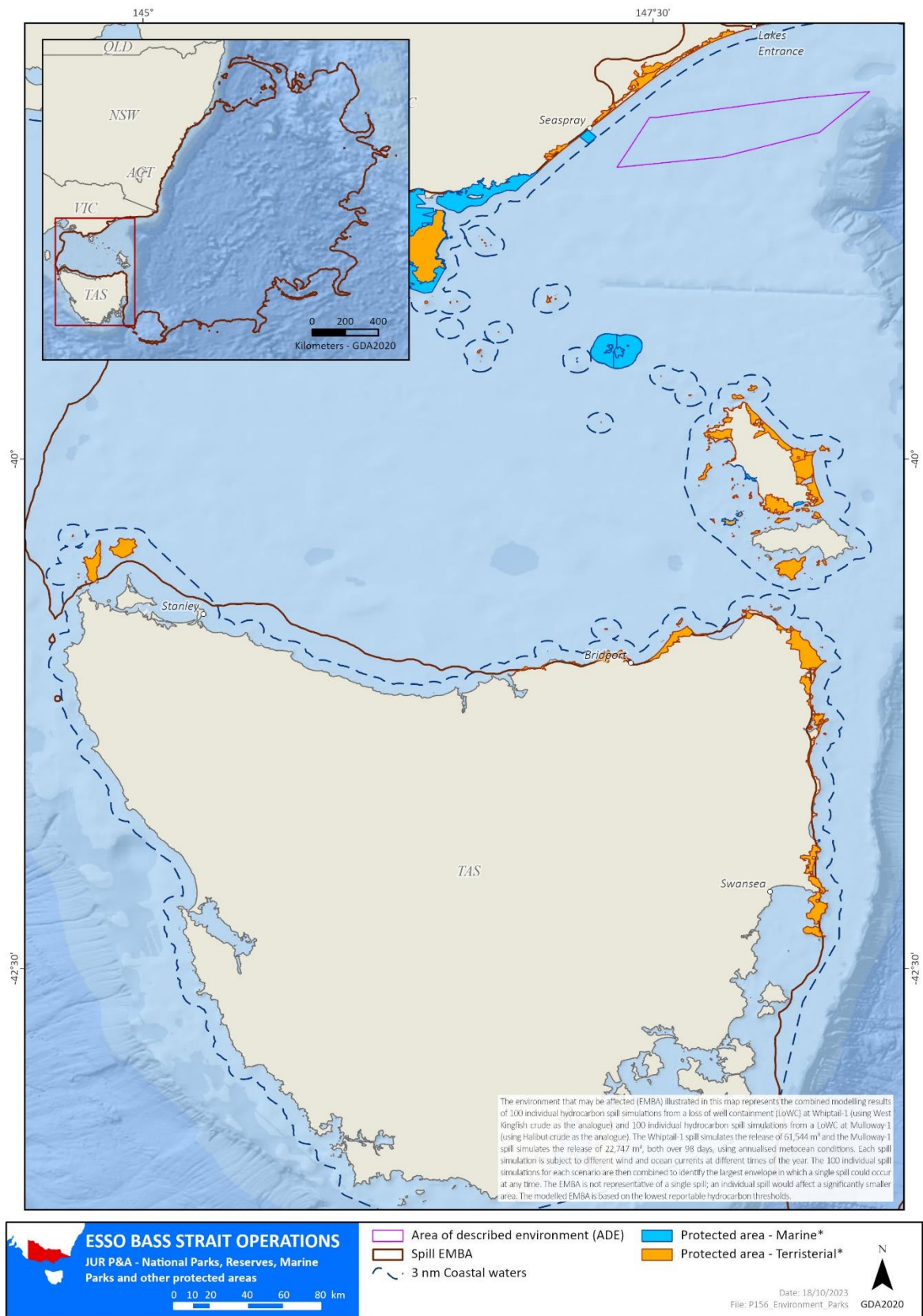


Figure 1-10 Tasmanian protected areas intersected by the EMBA

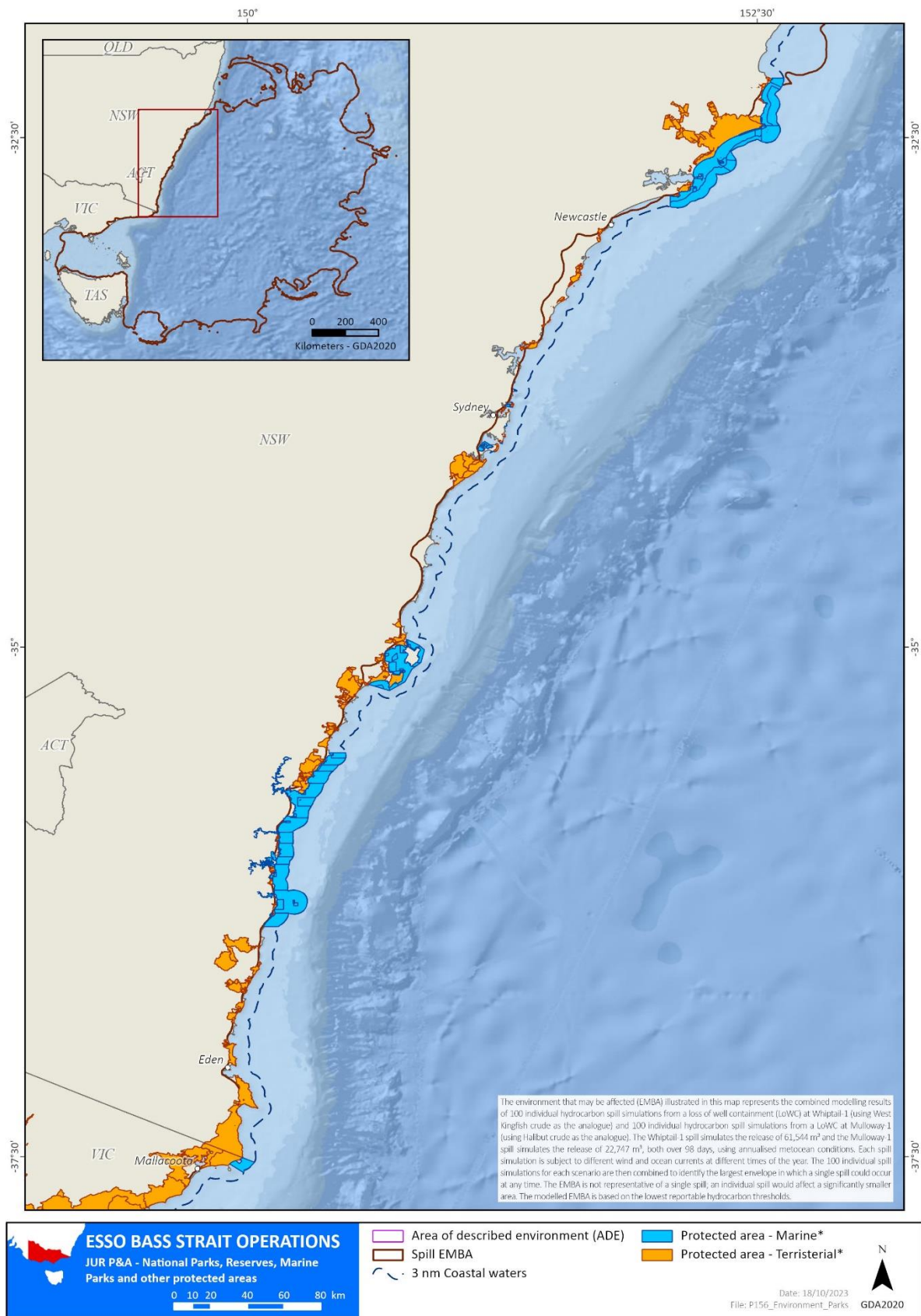


Figure 1-11 NSW protected areas intersected by the EMBA

1.2 Regional Context

The regional context of the EMBA is described in this section.

1.2.1 Southeast Marine Region

Six marine regions have been identified in Commonwealth waters around Australia. Australia has one of the largest marine jurisdictions of any nation in the world. Australian waters cover 14.7 million km², including waters around the external territories of Cocos (Keeling), Christmas, Heard and McDonald Islands as well as waters adjacent to Australia's Antarctic Territory.

The EMBA lies within two marine bioregions; the southeast marine region which is described here and the temperate east region which is described in the following section.

The key conservation values of the south-east Marine Region are (CoA, 2015):

- 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 and Bonney coast upwelling.
- Breeding and resting areas for Southern right whale.
- Migration areas for Blue, Fin, Sei, Southern right and Humpback whales.
- 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.

1.2.2 Temperate East Marine Region

The temperate east marine region spans an area of approximately 1.4 million km² from the southern boundary of the Great Barrier Reef in Queensland to Bermagui in Southern NSW. The key conservation values of the temperate east marine region are (CoA, 2012):

- Features with high biodiversity and productivity such as the Canyons of the Eastern Continental Slope and Shelf rocky reefs.
- Nesting sites for listed seabirds on islands along the NSW coast, including Montague Island (Short-tailed shearwater, Sooty shearwater).
- Breeding sites for little penguin, shearwater, Wilson's storm petrel, Crested tern
- Migration areas for Humpback whale.
- Breeding sites for Indo-Pacific Bottlenose Dolphin.
- Foraging sites for several species of petrel, albatross, shearwater.
- Three provincial bioregions.

1.2.3 Provincial Bioregions

Based on the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Version 4.0 (CoA, 2006), the EMBA is situated within the following provincial bioregions (see Figure 1-12):

- Bass Strait Shelf Province
- Central Eastern Province
- Central Eastern Shelf Province
- Lord Howe Province
- Southeast Shelf Transition
- Southeast Transition
- Tasman Basin Province
- Tasmania Province
- Tasmanian Shelf Province
- Western Bass Strait Shelf Transition

1.2.4 *Mesoscale Bioregions*

Based on the IMCRA Version 4.0 (CoA, 2006), the EMBA is situated within the within the following mesoscale bioregions (Figure 1-13):

- Batemans Shelf
- Boags
- Bruny
- Central Bass Strait
- Central Victoria
- Flinders
- Freycinet
- Hawkesbury Shelf
- Manning Shelf
- Otway
- Twofold Shelf

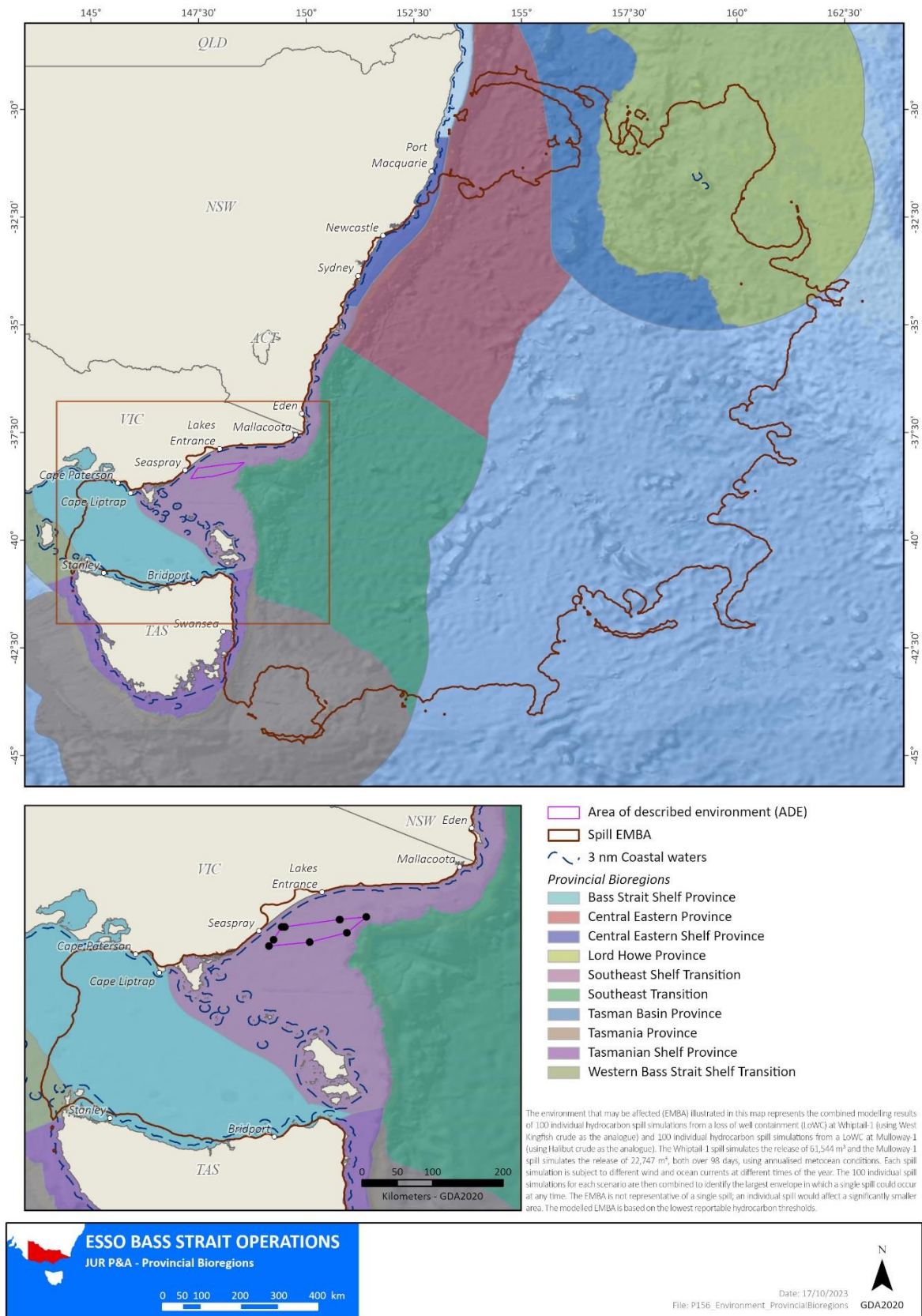


Figure 1-12 Provincial Bioregions within the EMBA

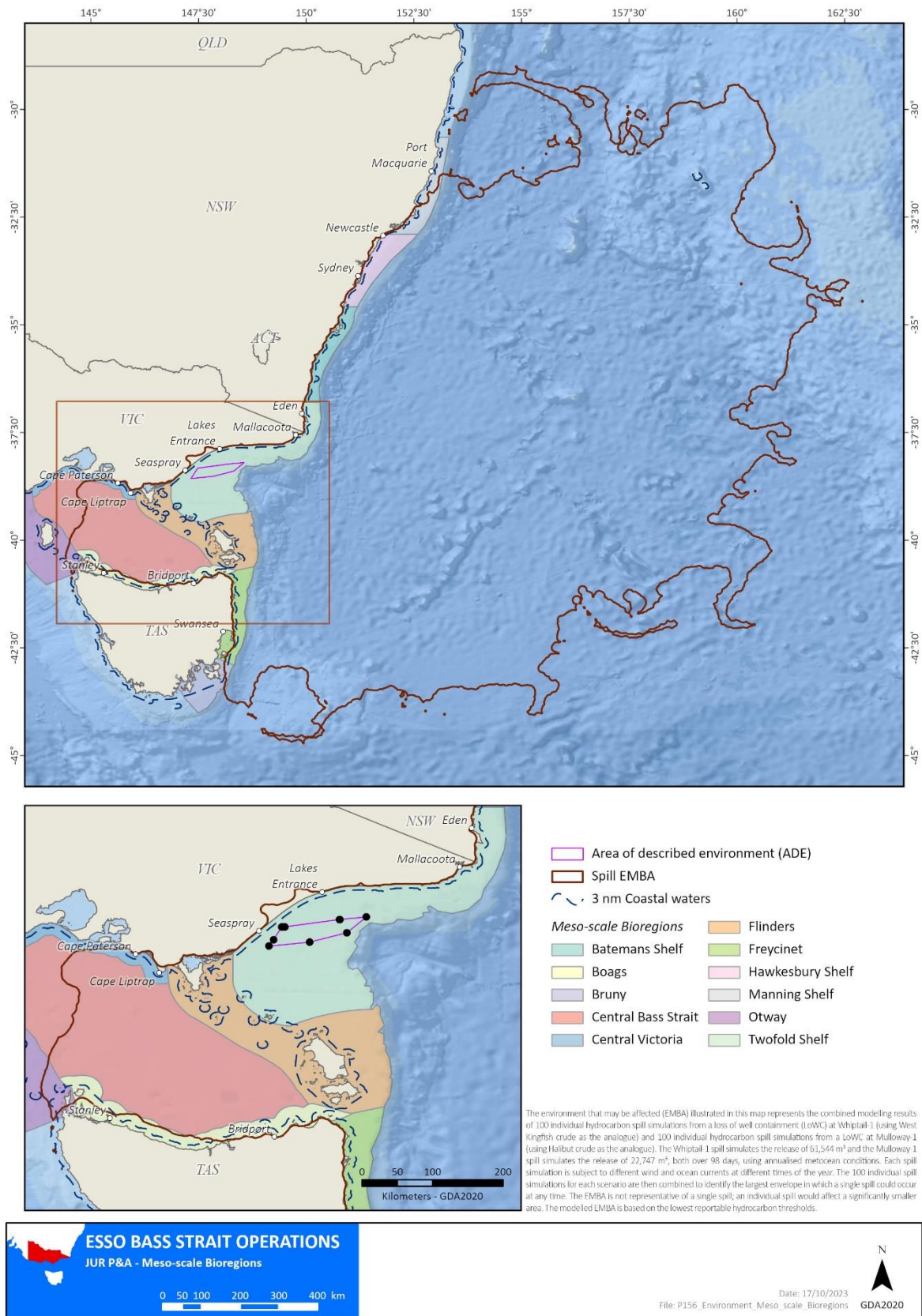


Figure 1-13 Mesoscale Bioregions within the EMBA

1.3 Physical Environment

1.3.1 Climate and Meteorology

Average summer air temperatures in coastal Victoria (Yarram Airport) range from early morning lows of 11 to 13°C, to afternoon highs of 23 to 26°C (BOM, 2017). Average winter temperatures range from minimums of 5°C to maximums of 15°C in the afternoons. Offshore (on Deal Island in central Bass Strait), milder conditions occur with an average summer range of 13 to 21°C and an average winter range of 9 to 14°C (BOM, 2017).

Average monthly rainfall along the Gippsland coast (Yarram Airport) ranges from 36 mm in January (highest 112 mm) to 60 mm in June (highest 174 mm). Offshore (on Deal Island in central Bass Strait) monthly rainfall ranges from 41 mm in January (highest 162 mm) to 78 mm in June (highest 247 mm) and shows a similar pattern to the coastal region (Lakes Entrance) with slightly higher winter rainfall: 38 mm in January (highest 90 mm) to 101 mm in June (highest 298 mm) (BOM, 2017).

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

There are three main and one minor types of storms which can generate severe wave conditions in the study area of Bass Strait. These are (Esso, 1989) and (Cardno, Metocean Criteria for Drilling-Baldfish, Bass Strait. Report 59918018., 2017):

- **South-east storms:** are generally associated with what has become known as an "east-coast low". East-coast lows are generally associated with very strong east to south-east winds (speeds in excess of 80 knots have been measured off the NSW coastline) and high rainfall. South-east storms resulting from east-coast lows occur relatively infrequently (on average 1 to 2 per year), and not all travel far enough south to cause concern in Bass Strait. The waves they generate are however, unrestricted by fetch or water depth. As such they have the greatest potential for generating extreme wave conditions in eastern Bass Strait.
- **South-west storms:** occur relatively frequently (typically several severe storms per year). Due to fetch and depth limitation, it is unlikely that extreme design-wave conditions will occur during a south-west storm.
- **South storms:** are generally associated with low-pressure systems in the western part of the Tasman Sea. During the peak of the storm the Tasman Sea lows generate very strong south south-east through to south south-west winds in Bass Strait. During storm development however, the wind can have a significant south-east or south-west component, depending on the origin of the low. Southerly storms occur at about the same frequency as south-east storms. Southerly storms are considered to have a greater potential than the south-west storms for generating extreme wave conditions.
- **Small-scale Bass Strait Lows:** can generate southeast, south, or southwest waves, depending on their origin and location. These storms can be quite severe (e.g., the January 1986 storm), but due to fetch limitations are unlikely to be the cause of extreme design-wave conditions.

1.3.2 Oceanography

1.3.2.1 Currents and Tides

Currents in the Gippsland Basin are tide and wind driven. Tidal movements predominantly have a northeast-southwest orientation. Tidal flows come from the east and west during a rising (flood) tide, and flow out to the east and west during a falling (ebb) tide. Tidal streams are dominated by the lunar tidal constituent, which has a period of 12.4 hours. The main tidal components vary in phase by about three to four hours from east to west. Most of this phase change occurs between Lakes Entrance and Wilsons Promontory. Timing of the high tide, for example, can vary by up to three hours across this region. Tides in the area from Lakes Entrance to Gabo Island are, however, relatively weak in comparison to other areas of Bass Strait (GEMS, 2005).

Bass Strait is characterised by shallow water and tidal currents. While there is a slow easterly flow of waters in Bass Strait, there is also a large anticlockwise circulation. The shallowness of the water means that these waters more rapidly warm in summer and cool in winter than other waters of the region.

Wind driven currents in Gippsland Basin can be caused by the direct influence of weather systems passing over Bass Strait (wind and pressure driven currents) and the indirect effects of weather systems passing over the Great Australian Bight (GAB) (GEMS, 2005).

The eastern parts of the region are strongly influenced by the East Australian Current (EAC) that flows southward adjacent to the east coast of NSW, Victoria and Tasmania, carrying warm equatorial waters (Refer Figure 1-14 and Figure 1-15). The Eastern Australian Current (EAC) is up to 500 m deep and 100 km wide and is strongest in summer when it can flow at up to 5 knots. In winter it flows at 2–3 knots as the oceanographic and climatic drivers in the Coral Sea diminish. The EAC tends to form ocean eddies that rotate around warm, central cores that can be up to 200 km across and may persist for months. Eddies form more frequently off the south coast of NSW than other areas but are also common along the east coast of Tasmania. The eddies can cross the continental shelf, and when mixing with shelf break waters, create upwellings that form isolated areas of enhanced productivity 200–300 km in diameter. Seasonal and transient upwellings are important ecological features of the Region. The EAC also affects sea surface temperatures on the eastern Tasmanian shelf, which can vary substantially among years depending on the relative influence of subtropical waters.

At the shelf break east of Bass Strait, nutrient-rich waters rise to the surface in winter as part of the processes of the Bass Strait Water Cascade, where the eastward flushing of the shallow waters that are more saline and slightly warmer than surrounding Tasman Sea waters form an undercurrent that cascades down the continental slope. The cascading water has a displacing effect causing nutrient rich waters to rise which in turn leads to increased primary productivity in those areas. The cascading water also concentrates nutrients, and some fish and whales are known to aggregate along its leading edge.

Further offshore, in the southeast, currents are driven by two parameters, the Sub-Antarctic Water movement, coming from the south, and the Bass Strait Water movement from the west (Tomczak, 1985) (Gibbs, 1991). The presence of deepwater currents is documented in the Blackback Oceanographic Study (Lawson and Treloar, 1996), Kingfish B Wave, Current and Wind data (Treloar, 1998) and Metocean Design Criteria for Bass Strait Fixed Platforms (Esso, 1989).

Esso undertook a comprehensive current measurement program in the Blackback study area using seven current meters moored 3 m above the seabed over a 12 month period (Lawson and Treloar, 1996) to provide an understanding of the regional oceanography of the Bass Strait shelf and continental slope, particularly the relative importance of tidal, wind-driven and density-generated currents and the influence of regional topography on currents in the study area.

Tidal current analysis indicated general seabed current alignment normal to the bathymetry, at speeds of around 0.2 to 0.3 m/s. The dominance of the bathymetry was most evident at the current meter sites located within a clearly defined valley.

Analysis of residual, non-tidal current vectors during significant storm periods has confirmed that wind driven currents are the strongest currents in the continental shelf areas but are of progressively lesser significance lower down the continental slope. The study has also provided evidence of flow of water from the continental shelf down the continental slope, conforming to the Bass Strait Cascade, as evidenced by high easterly currents and minimum vertical variation in temperature from the shelf to depths of 500 m. Currents during these cascade flows were stronger than background tidal currents and were the strongest currents recorded lower down the continental slope.

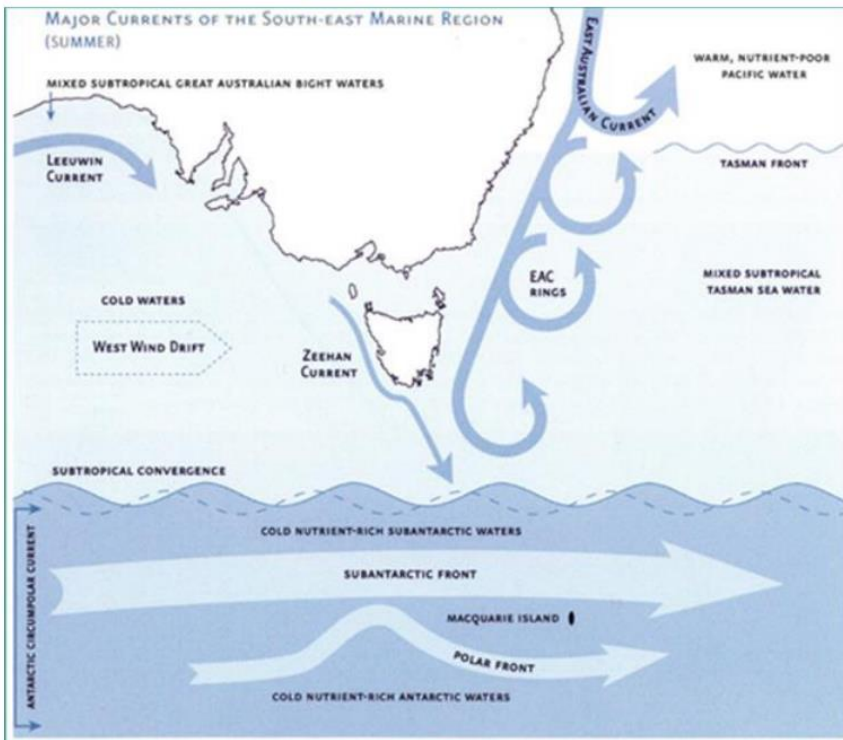


Figure 1-14 Major ocean currents in south-eastern Australian waters summer

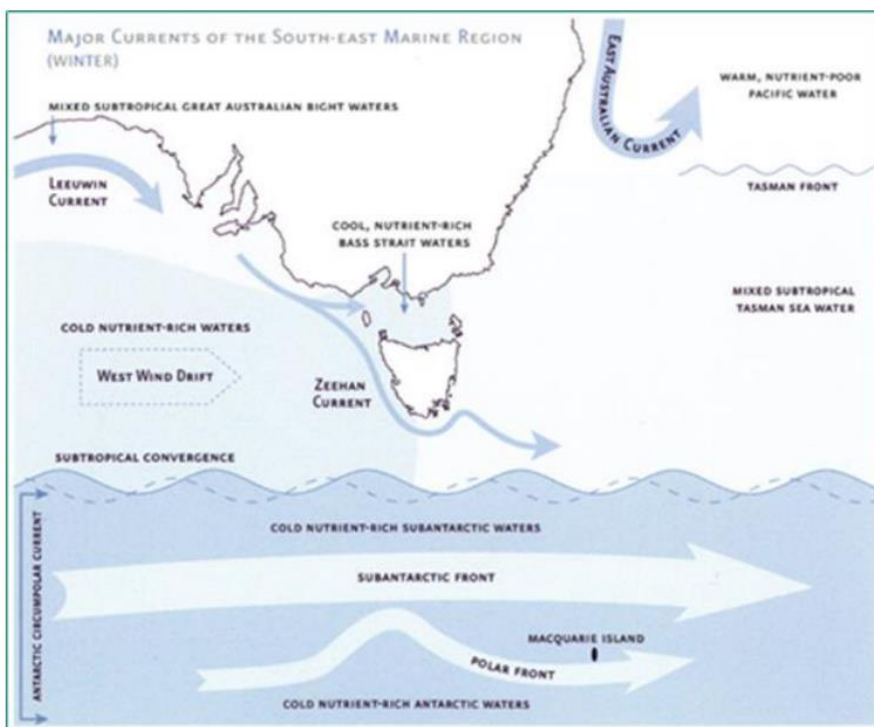


Figure 1-15 Major ocean currents in south-eastern Australian waters winter

1.3.2.2 Water Temperatures and Density Stratification

Temperatures in the subsurface waters of Bass Strait range from about 13°C in August/September to 16°C in February/March. Surface temperatures can exceed 20°C at times in late summer due to the warmer waters of the East Australia Current entering the strait. Water temperatures within the EMBA are expected to follow this pattern (Jones I., 1980). Table 1-2 shows the monthly average sea surface temperatures and salinity as obtained from the World Ocean Atlas 2013 database which shows the same range of temperatures as those previously recorded. Monthly average sea surface temperatures were shown to range from 14°C (August, September) and 20°C (March). Salinity remained consistent throughout the year ranging from 35 to 36 psu (RPS, 2018).

Table 1-2 Average monthly sea surface temperature and salinity nearby Blackback well location within the 0-5 m water depth

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	19	20	20	19	18	16	15	15	14	15	16	18
Salinity (psu)	35	35	36	36	35	36	36	36	35	36	36	36

Waters are generally well mixed, but surface warming sometimes causes 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 from the bottom well mixed layer. As a result, upwelling of cold water on the northern shores of Bass Strait can occur (Jones I., 1980).

Information on density and temperature profiles of the deeper area of the Blackback field has been obtained (Lawson and Treloar, 1996). Temperatures measured at the seabed confirmed a decrease in temperature with depth of measurement. The survey also showed a period (July to September) of uniformity of temperature at all measured depths, indicating flow down the continental slope (Bass Strait Cascade). The range of water temperatures observed at the seabed is from a maximum of 17°C at 93 m to a minimum of 7°C at 480 m. The minimum temperatures at depth were recorded in summer, possibly because of stronger stabilising stratification and absence of the cascade of relatively warmer water during winter.

1.3.2.3 Waves

Bass Strait is a high energy environment exposed to frequent storms and significant wave heights. High wave conditions are generally associated with strong west to southwest winds caused by the eastward passage of low-pressure systems across Bass Strait. Storms may occur several times a month resulting in wave heights of 3 to 4 m or more. In severe cases, southwest storms can result in significant wave heights of greater than 6 m (Jones 1980).

Wave data have been analysed for the ten year period from 1977 to 1987 (Lawson, 1987). Wave conditions at Blackback exhibit an increased wave climate, in excess of those experienced at further inshore facilities due to the increased fetch length of waves approaching from the south west. Higher wave conditions are generally associated with strong west to south west winds caused by the eastward passage of low pressure systems across Bass Strait. These may occur several times per month and can result in significant wave heights of three to 4 m or more. In severe cases, south west storms can result in significant wave heights of up to 6 - 7 m.

Extreme design wave conditions are associated with east coast low pressure systems. These can result in very strong east to south east winds in eastern Bass Strait. The 1989 Metocean Design Criteria Report (Esso, 1989) gives a design significant wave height of 9.0 m and a corresponding maximum wave height of 17.5 m.

1.3.2.4 Bathymetry

The seabed bathymetry across the region is highly variable. Majority of the EMBA lies within water past the shelf in depths greater than 300 m up to 5,000 m (see Figure 1-16). The bathymetry contours along the coast where the EMBA lies ranges from 10 - 300 m deep.

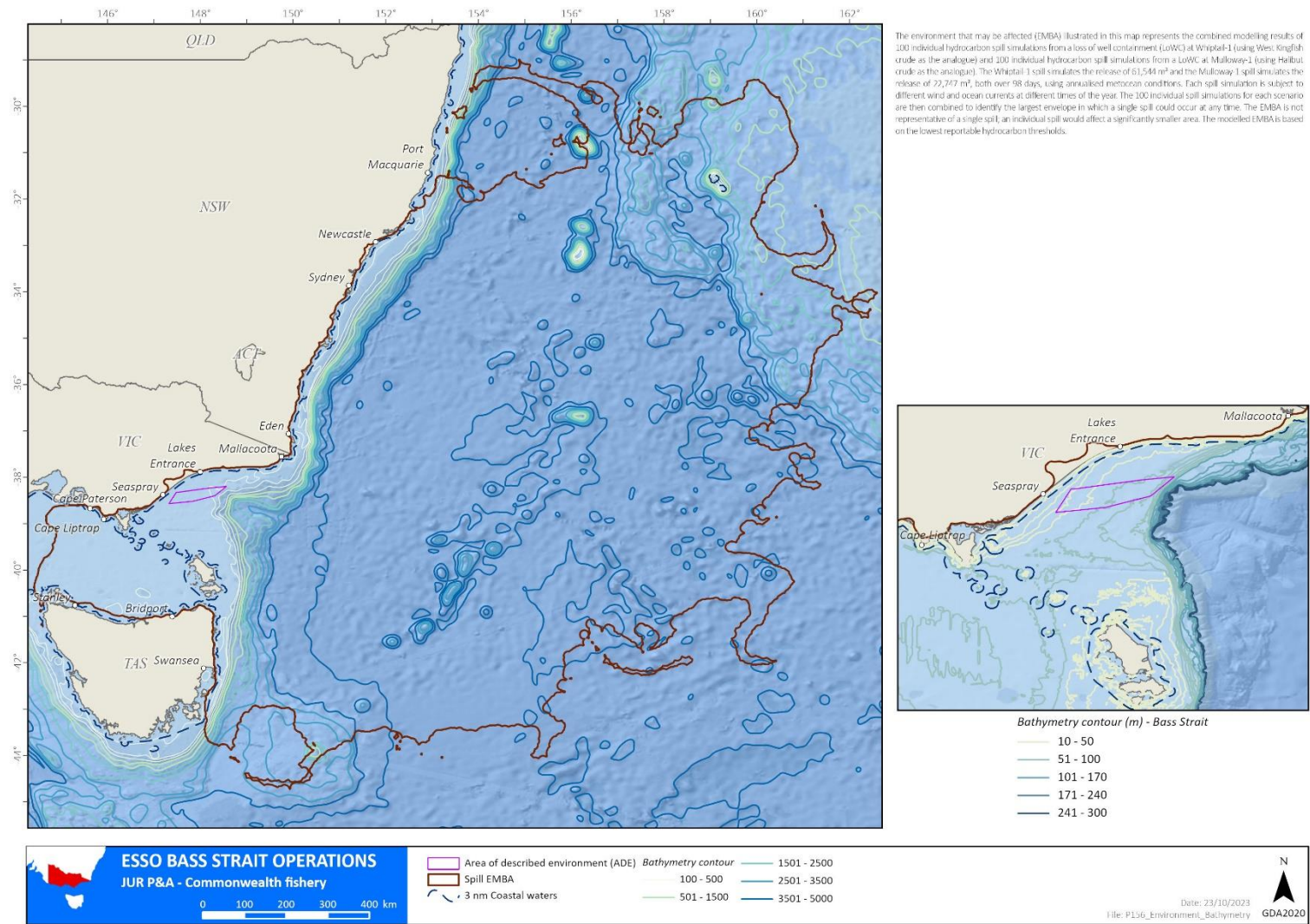


Figure 1-16 Bathymetry within the EMBA

1.4 Biological Environment

1.4.1 Benthic Habitat

1.4.1.1 Bare Substrate

Unvegetated bare substrate is a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone. The biodiversity and productivity can vary depending upon depth, light, temperature, and the type of sediment present.

In the Gippsland Basin, seabed material is predominantly calcium carbonate comprised of calcarenite marls and marine shales (Esso, 2009). Folk sediment classification of the samples taken at the West Kingfish and Tuna platforms describe the sediments as ranging between slightly muddy, gravelly (m/g/S) and muddy, gravelly sand (m/g/S) with two locations at Tuna being classed as gravelly sand (g/S) (Cardno, 2019). Similarly, the West Barracouta geophysical survey classified the seabed as featureless with consistently medium to high variable reflectivity, with backscatter characteristics indicative of fine to coarse calcareous sand with shells (DFWSS, 2018). The 2009 Snapper study found that the seabed surrounding the platform is entirely comprised of soft sediments with no areas of hard substrate or rocky reef (Coffey, 2010). Generalised cross section taken from the Blackback Site survey report and accompanying representative sediment photographs indicate that the seabed sediments at the Blackback region are dense fine to medium grained siliceous carbonate sand (carbonate content ~80%) with some silt and shell debris. The samples from the canyon areas had a higher proportion of gravel and shell fragments relative to the slope and ridge samples.

The Gippsland Basin is composed of a series of massive sediment flats, interspersed with small patches of reef, bedrock and consolidated sediment. The sandy plains 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 study of the seascape of the south-eastern Australian continental shelf conducted in 2001 found that 89% of the seabed was sediment flats/bare substrate with prominent hard grounds making up the remaining 11% of the seabed (Bax, 2001).

The benthic fauna present on the soft sediment can be broadly divided into two groupings:

- The epibenthos which includes sessile species such as sponges and bryozoans, hydroids, ascidians, poriferans and mobile fauna including hermit crabs, sea stars and octopus.
- The infauna which includes a diverse range of species such as amphipods, shrimps, bivalves, tubeworms, small crustaceans, nematodes, nemertean, seapens, polychaetes and molluscs (Parry, 1990).

Many of these species are burrowing organisms that cause moderate bioturbation (Edgar, 2001). Scientific surveys have shown that some shallow Victorian sandy environments have the highest levels of animal diversity in the sea ever recorded (ParksVic, 2016). In the area around the Ninety Mile Beach Gippsland more than 600 different marine animal species, many of them very small, have been found within an area of 10 m² (ParksVic, 2016). This high species richness was a major factor in the creation of a Marine National Park on the Ninety Mile Beach (ParksVic, 2017d). The subtidal sand invertebrate fauna is dominated by small animals, mostly crustaceans, molluscs, echinoderms and polychaetes (A Plummer, 2003) (Williams, 2001).

(Parry, 1990) found high diversity and patchiness of benthos sampled off Lakes Entrance, where a total of 353 species of infauna was recorded. Crustaceans (53%), polychaetes (32%) and molluscs (9%) dominated sample results. A significant site for the listed opisthobranch mollusc (seaslug) *Platydoris galbana* is located off Delray Beach, 2 km south-west of Golden Beach on the shoreline (O'Hara, 2000). An ROV seabed survey was conducted following drilling at the Snapper operational area in 2009 (Coffey, 2010) and a seabed monitoring program conducted near West Tuna in 1999 (URS, 2000) confirmed that polychaetes and crustaceans were the most abundant infaunal taxa present in the seabed sediments.

These results were further supported by two studies conducted in 2018 for Esso. The first, an in-situ sediment quality and infauna sampling program conducted at West Kingfish and Tuna (including reference locations), confirmed that polychaetes, crustaceans, and molluscs were the most abundant groups of taxa at all the sampled locations. The dominance (in terms of abundance) of taxa varied among zones and reference locations at each platform and between platforms. The benthic infauna assemblages were diverse with a range of taxa having a substantial contribution to the overall assemblage structure. The study investigated the drivers for potential

influence on the entire assemblage of benthic infauna and found that it was the proportion of gravel (> 2.00 mm) particles in the sediment that was the most significant influencing factor. Figure 1-17 shows the proportion of the assemblage represented by the Crustacea, Polychaeta, Mollusca, Echinodermata and the Order groups for 'Other Worm Phyla' and 'Other Phyla' for the West Kingfish sampling and Figure 1-18 shows the proportion of those assemblages for the sampling conducted at Tuna. The graphs show that the proportions of these assemblages were generally consistent between locations at the West Kingfish platform, however there were significant differences in the benthic infauna assemblages between locations at Tuna platform. Analysis indicated these differences were driven by changes in the physical characteristics of the environment, for example grain size and hydrodynamic differences between locations (Cardno, 2019).

The second 2018 Esso baseline study for the West Barracouta project found similarities in the dominant taxa throughout the survey locations which included annelids (polychaetes), crustaceans (amphipoda, isopoda and decapoda) and molluscs (gastropods and bivalves). This study also found that there was dissimilarity between infauna groups and these were variable throughout the survey area, likely reflecting the heterogeneous nature of the survey area (DVSS, 2018). Figure 1-19 shows the taxa classed abundance of infauna at each of the monitoring sites at West Barracouta. The variation in abundance seen between the West Kingfish/Tuna studies and the West Barracouta study is due to the sample sizes taken. West Kingfish/Tuna sample size averaged 2.3L. West Barracouta sample size was 66L (0.66 m²).

The studies suggest there is a consistent variation in the types and abundance of benthic infaunal species forming assemblages across the across Bass Strait. Though the benthic infauna taxa collected during this study are similar to those previously recorded, the contribution of each one to the overall assemblage was different in the majority of cases. The differences in the contribution of individual taxa to the overall assemblage between studies could have resulted from a number of natural factors including habitat heterogeneity (micro and macro-scale), depth and sediment characteristics (URS, 2000) and temporal differences between sampling periods (Cardno, 2017). This is consistent with the 2004 study of Sediments and Benthic Biota of Bass Strait (GA, 2004), which concluded that it is not possible to classify the biological assemblages into a scheme that can be mapped across Bass Strait. The study emphasized that assemblages could have different distribution patterns to species and that environmental gradients rather than discrete bioregions or habitats better explain the biotic patterns observed in the sea bed of Bass Strait. Analysis of physical variables, derived from data collected on previous surveys by Geoscience Australia and supplemented by more recent data, show that longitude and depth are also important factors in explaining the biological diversity (GA, 2004).

The introduced New Zealand screw shell (*Maoricolpus roseus*) is present in eastern Bass Strait and is known to form extensive and dense beds on the sandy seafloor spreading to the 80 m isobath off eastern Victoria and NSW (Patil, 2004). Larger animals found in these soft sediment environments in Victoria have included Smooth Stingray (*Dasyatis brevicaudata*), Pipi (*Plebidonax deltoideus*), Dumpling Squid (*Euprymna tasmanica*), Common Stargazer (*Kathetostoma leave*) and Heart Urchin (*Echinocardium cordatum*) (ParksVic, 2016). Soft sediment habitat is the dominant habitat within the EMBA.

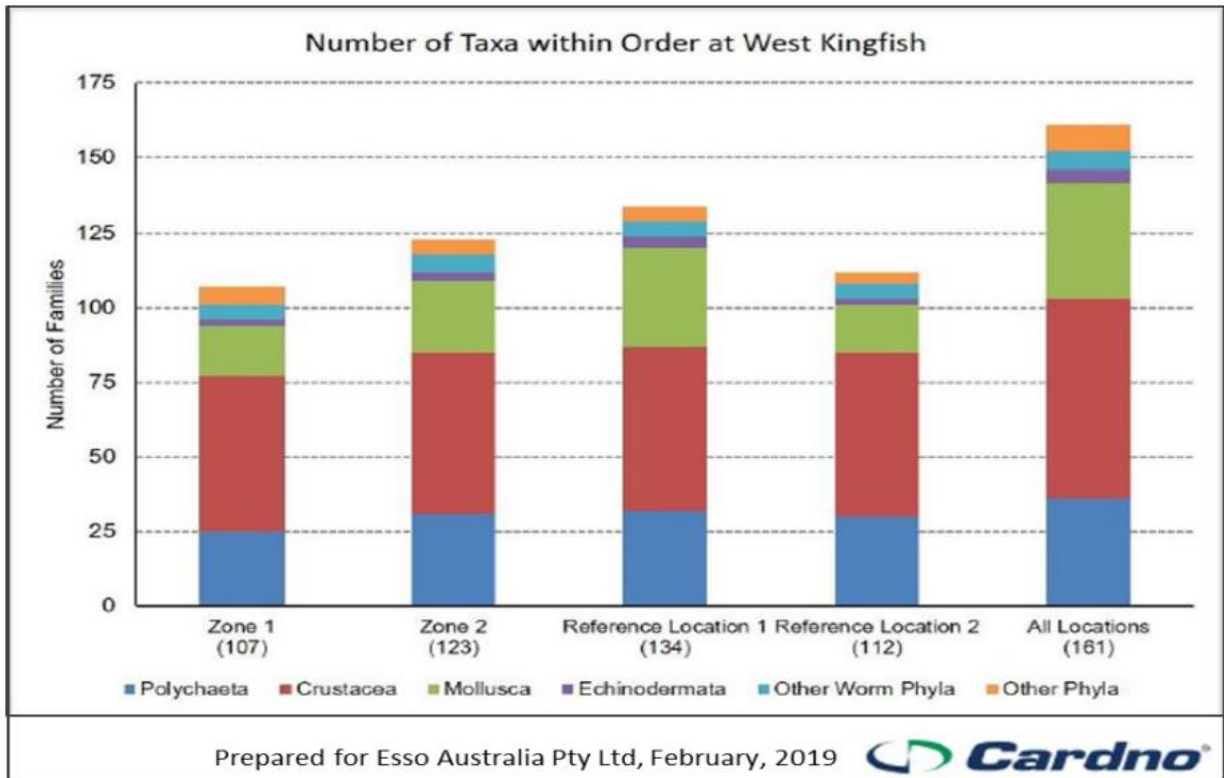


Figure 1-17 Number of taxa sampled at West Kingfish platform (Zones 1 and 2) and reference locations (Locations 1 and 2). Values in parentheses indicate the total number of taxa sampled

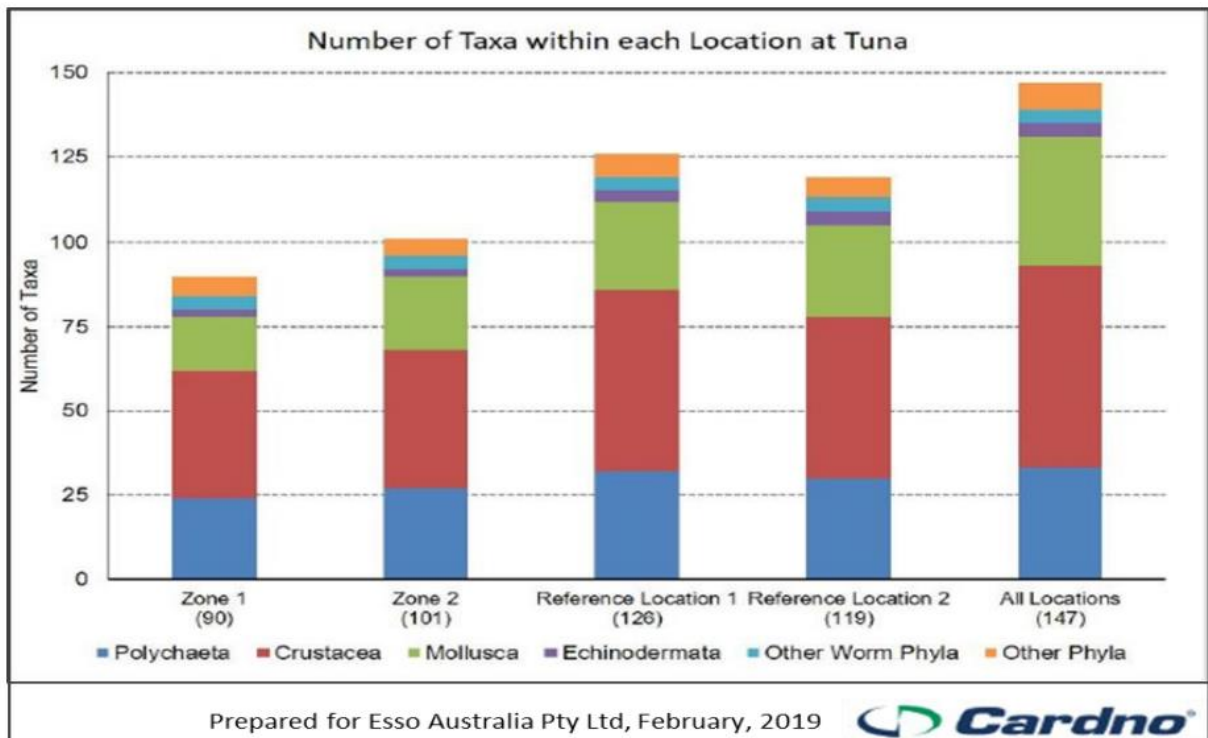


Figure 1-18 Number of taxa sampled at Tuna platform (Zones 1 and 2) and reference locations (Locations 1 and 2). Values in parentheses indicate the total number of taxa sampled

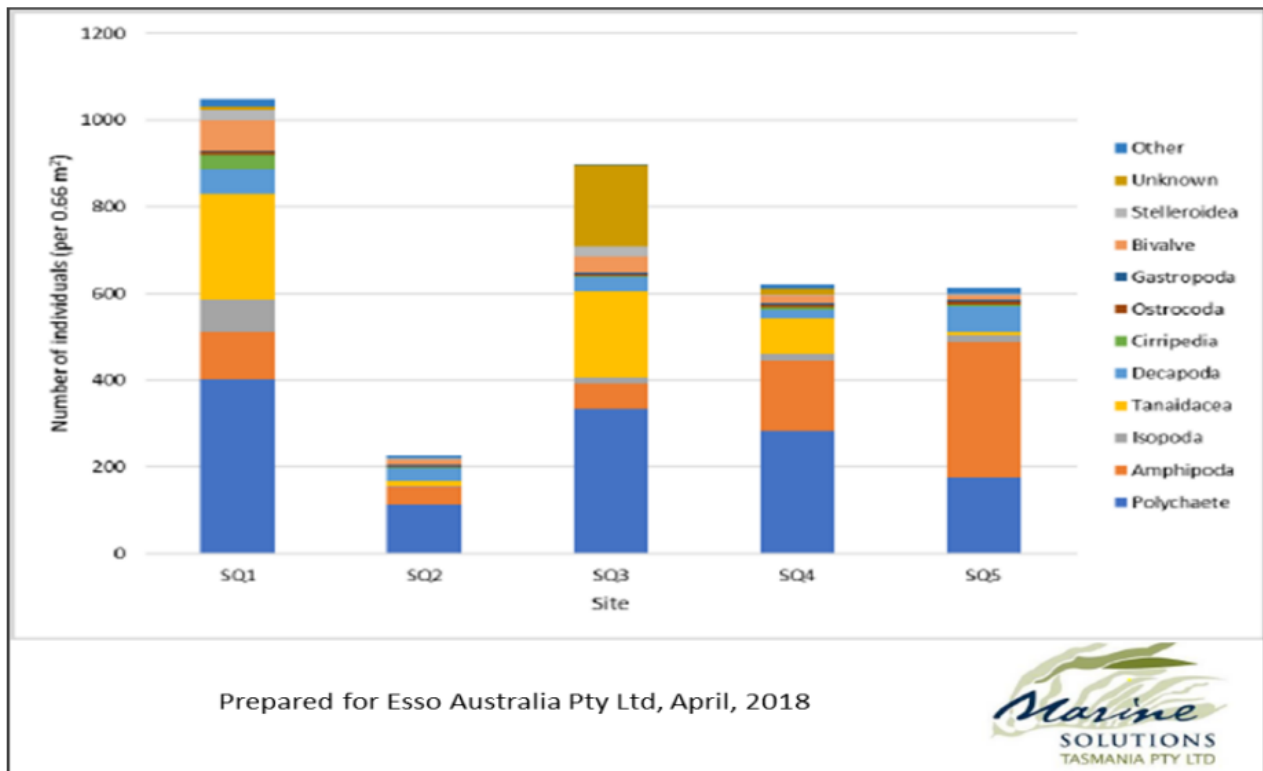


Figure 1-19 Taxa classed abundance of infauna at West Barracouta monitoring

1.4.1.2 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). The dominant temperate species in the EMBA are *Amphibolis antarctica*, *Halophila australis*, *Heterozostera tasmanica*, *Posidonia australis*, *Posidonia angustifolia* and *Zostera muelleri* (Kirkham, 1997). Seagrasses generally grow in sediments in intertidal and shallow subtidal waters where there is sufficient light and are common in sheltered coastal areas such as bays, lees of island and fringing coastal reefs (DEWR, 2006) (McLeay, 2003) (Rogers, 2013) (McClatchie, 2006).

Seagrass meadows are important in trapping and stabilising sediments, as seagrass leaves baffle wave action and reduce water movement to the extent that fine suspended particles settle out and are trapped (Edyvane, 1998). Seagrass meadows also provide habitat and nursery grounds for juvenile fish and invertebrates, enhance biodiversity, and promote primary production (Huisman, 2000), (Rogers, 2013), (Kirkham, 1997).

Known areas of seagrass within the EMBA include Corner Inlet and Lakes Entrance in Victoria, and numerous inlets and estuaries along the NSW coast (Lucieer V, 2017). While seagrass meadows are present throughout this region, the proportion of seagrass habitat is not high compared to the rest of Australia, in particular with parts of SA and Western Australia (WA) (Kirkham, 1997).

Seagrasses are highly productive habitats that occur on intertidal flats and in shallow coastal waters worldwide from arctic to tropical climates. Water temperature, light penetration, sediment type, salinity, and wave or current energy control seagrass distribution. Seagrasses provide breeding and nursery grounds for fish and wildlife. Seagrasses are used by fish and shellfish as nursery areas.

1.4.1.3 Subtidal Rocky Reefs

This habitat occurs either as extensions of intertidal rocky shores or as isolated offshore reefs and are always submerged. The rocky reefs of southern Australia support a highly endemic marine flora and fauna. Subtidal rocky reefs are scattered along the Gippsland shore and make up approximately 11% of the south-eastern Australian shelf (Bax, 2001).

This habitat consists of subtidal substrates composed primarily of limestone reefs and outcrops of sandstone and granite. The composition and characteristics of the substrate varies across the region based on its geologic origin and history. Fossiliferous limestone, as the name suggests, is composed of skeletons of dead animals, such as bivalve and bryozoan clasts. The skeletal elements are cemented together by a fine-grained calcareous matrix formed by a slow rate of sedimentation suggesting that the process is continuing to (slowly) occur on the Gippsland basin continental shelf (Bax, 2001). Known locations of this type of substrata are Howe Reef, Gabo Reef and Broken Reef.

Limestones usually form in large, tabular slabs of low relief (<2 m) as is the case in Broken Reef, however they can also form as low-lying hard grounds that are bored and encrusted by benthic organisms. These are likely to form 'patches' or mosaics of hard substratum that show little (<20 cm) or no vertical relief. Based on ROV video surveillance, the presence of South East Reef is not evident when comparing the abundance of biota around the Cobia platform versus other facilities (base on Esso ROV inspection data from 2010, 2013 and 2014). This may be due to the layer of sediment coverage over the hard substrate or the lack of extrusions/elevations.

Another form of the hard substrate is the coarse-grained, quartz rich sandstone. In Gippsland, sandstone, together with fossiliferous sandstone, occurs as elongate, low relief slabs which crop out from soft sediments along the Gippsland coastline. Whilst not confirmed this type of sandstone is also likely to be a common constituent of banks or reefs further offshore.

On the inner shelf of the Gippsland coastline are relatively localized, higher relief (>10 m) outcrops formed of distinctive irregular, hexagonally jointed, coarsely crystalline granite, or hard reefs. Point Hicks and New Zealand Star Banks are areas of granite reef. Figure 1-20 shows high level substrata distribution in south-east Australia (Bax, 2001).

Rocky reef habitats can support rich, diverse communities of attached epifauna (e.g., stalked chrinoids, sponges, ascidians etc.) and associated algae and other fauna. Structures with a higher relief (reef or bank) several metres high can provide protection and food and attract a diversity of fish and invertebrate species (NOAA, 2010).

The substrata are only one factor which influences the presence of biological communities. The distribution of fish and invertebrate communities is also correlated with latitude, depth, temperature, and hydrology. Areas where the overlap of temperate and subtropical currents coincide will have a different distribution of communities to places like Horseshoe Canyon where upwelling occurs.

Other known areas of subtidal rocky reef include; Bastion Point, Quarry Beach, Little Rame Head, Wingan Point, The Skerries Special Management Area, Petrel Point, Thurra River, Pearl Point, Yeerung River Estuary (Intermittently open), Cape Conran (East Cape, Cowrie Bay, Flat Rocks), Point Ricardo and Ricardo Beach (all of which are within the EMBA).

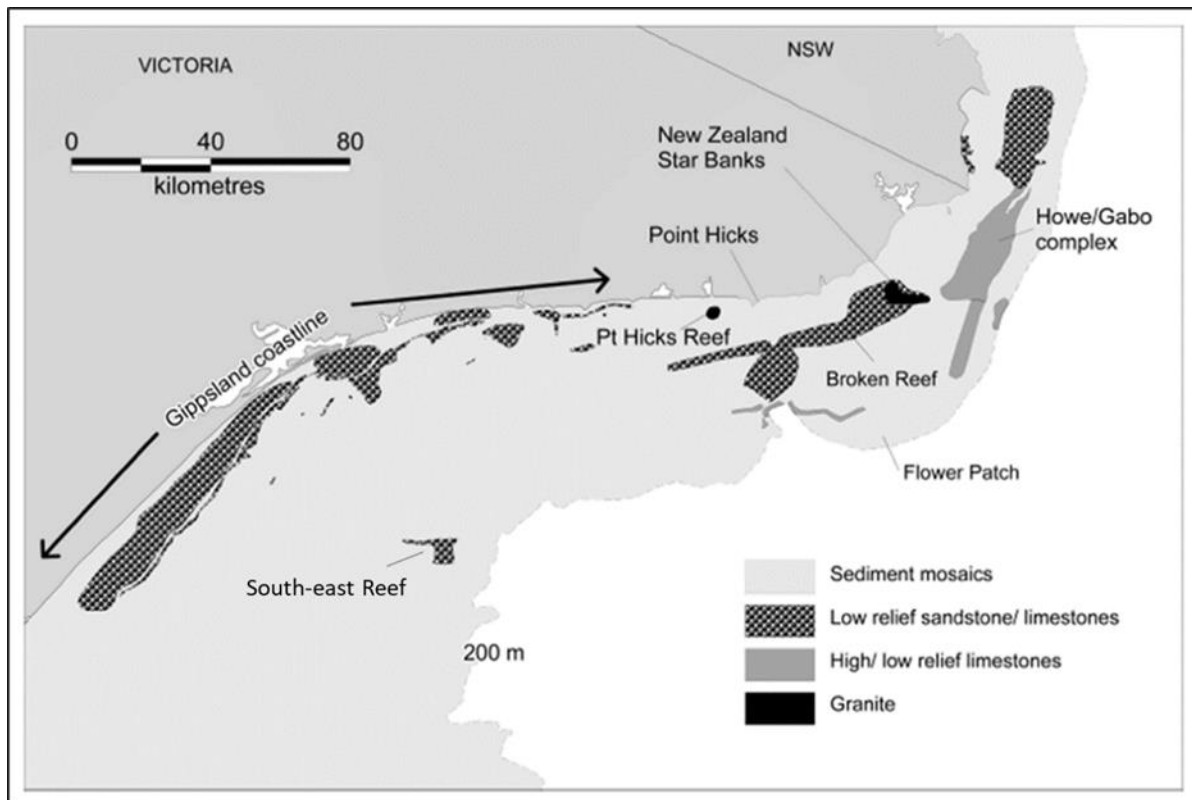


Figure 1-20 Substrata on the south-eastern Australian continental shelf

1.4.1.4 Macroalgae

Macroalgae are multicellular, marine algae, commonly known as seaweed. Macroalgae communities are generally found on intertidal and shallow subtidal rocky substrates as they require a surface to attach themselves to and can occur throughout Australian nearshore waters. 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, 2006). Macroalgae assemblages vary, but *Ecklonia radiata* and *Sargassum sp.* are typically common in deeper areas. The principal physical factors affecting the presence and growth of macroalgae include temperature, nutrients, water motion, light, salinity, substratum, sedimentation and pollution (Sanderson, 1997). Macroalgal systems are an important source of food and shelter for many ocean species; including in their unattached drift or wrack forms (McClatchie, 2006).

Kelps are very large brown algae that grow on hard sub tidal substrates in cold temperate regions. Kelps have a holdfast that attaches to the substrate, a stem-like or trunk-like stipe, and large, flattened, leaf-like blades called fronds. The Giant Kelp Marine Forests are classed as threatened ecological communities. Refer to section 1.1.6.3 for information on giant kelp marine forests.

Known areas containing macroalage within the EMBA include around Gabo Island and within the Bemm River estuary (Lucieer V, 2017).

1.4.1.5 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 (Keable, 2007). Hard corals are generally found in shallower (<50 m) waters, while soft corals are found at most depths, including 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 daylight 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, 2009).

While corals may not occur as a dominant habitat type within the Gippsland sector, their presence has been recorded within the region (e.g. Kent Group Marine Reserve, Freycinet Marine Park, and around Wilsons Promontory) (all of which are within the EMBA). Soft corals are typically present in deeper waters throughout the continental shelf, slope and offslope regions, to well below the limit of light penetration.

The cauliflower soft coral (*Dendronephthya australis*) (see Appendix D) is considered an endangered species and may occur within the EMBA. The species is predominantly found in estuarine environments in NSW at depths of 1 - 15 m, however, it occasionally occurs offshore to depths of 30 m and provides habitat for a variety of fish and invertebrates, including the endangered White seahorse (*Hippocampus whitei*) and juvenile snapper (TSSC, 2020).

1.4.1.6 Submarine canyons

Submarine canyons are abundant features along continental and oceanic island margins that connect continental shelves to deep ocean basins. Because of the physical complexity of canyon habitats, predictions concerning the effects of canyons on diversity are not straightforward since a variety of environmental and physical characteristics interact in canyon habitats. The most important driver affecting biodiversity and biomass/abundance patterns in canyons is organic matter input and is mostly related to coastal detrital inputs or pelagic productivity regimes (De Leo FC, 2010).

Seafloor terrain and substrate heterogeneity account for the second most important driver of benthic biodiversity in submarine canyons. One of these factors, sediment grain size, can be considered as a 'super-parameter' (Etter, 1982) since it directly or indirectly reflects local physical energy and sedimentation patterns. At moderate rates of flow and sediment deposition, suspension and deposit feeding, macrobenthos can be enhanced in abundance and/or diversity in canyons (Vetter, 1998), whereas at high rates of flow and sediment accumulation, canyon fauna can become impoverished, yielding low species richness and high dominance by a few tolerant species (Rowe, 1982) (Gage, 1995) (Vetter, 1998).

While some studies have reported levels of megafaunal biodiversity in canyons rivalling seamounts (Schlacher, 2007), in other cases high disturbance rates (Rowe, 1982) and absence of stable habitat collection led to faunal impoverishment compared to adjacent slope environments (Vetter, 1998).

1.4.2 Coastal Environment

A range of shoreline types are represented along the coastal areas within the EMBA, including sandy shoreline, rocky shoreline, cliffs, intertidal flats, and saltmarsh (Griffin C, 2012).

The coastline, from Wilson's Promontory in the west to Cape Howe in the east near the NSW border consists mainly of steep sandy beaches and rocky outcrops.

The NSW coast consists primarily rocky outcrops with sections of sandy beaches and rocky cliffs. The offshore islands in Bass Strait are characterised by their steep cliffs and rocky shores. These shoreline types are also dominant along the north and east coast of Tasmania.

1.4.2.1 Sandy Shorelines

This shoreline type has been defined as beaches dominated by sand-sized (0.063 - 2 mm) particles, and also includes mixed sandy beaches (i.e., sediments may include muds or gravel, but sand is the dominant particle size).

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 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 the most common along the entire Victorian coast, including popular locations such as Ninety Mile Beach (East Gippsland, Victoria) and Squeaky Beach (Wilson's Promontory, Victoria). Bondi Beach is the most notorious sandy beach in Australia.

1.4.2.2 Rocky Shorelines

Sheltered rocky shores are characterized by a rocky substrate that can vary widely in permeability. This shoreline type has been defined as hard and soft rocky shores, including bedrock outcrops, platforms, low cliffs (less than 5 m in height), and scarps. Depending on exposure, rocky shores can be host to a diverse range of flora and fauna, including barnacles, mussels, tube building worms, sea squirts (cunjevoi), sea anemones, sponges, sea snails, starfish, and algae. Australian fur seals are also known to use rocky shores for haul-out and/or breeding. Most animals on the intertidal rocky shores are herbivorous molluscs, grazing algae off rock surfaces.

This is a common shoreline type along the southern NSW coast, the islands of Bass Strait, and for smaller areas of Victoria's coast (e.g., Wilson's Promontory). Intertidal rocky shores occur at Bastion Point, Quarry Beach, Shipwreck Creek, Seal Cove, Little Rame Head, Sandpatch Point, Petrel Point, Thurra River, Clinton Rocks, Cloke Rock, Tamboon Inlet and Shelley Beach (all of which are within the EMBA).

1.4.2.3 Sea Cliffs

The intertidal zone is steep (>30° slope) and narrow with very little width. Sediment accumulations are uncommon because waves remove debris that has slumped from the eroding cliffs. There is strong vertical zonation of intertidal biological communities. Species density and diversity vary greatly, but barnacles, snails, mussels, polychaetes, and macroalgae can be abundant (NOAA, 2010).

This environment occurs behind Betka Beach and Secret Beach through to Little Rame Head, Sandpatch Point, Wingan Point, The Skerries, Rame Head, Petrel Point, Point Hicks, Clinton Rocks, Tamboon Inlet, Pearl Point, Cape Conran (Needle Rocks, Irvine Rocks, Quincy Rocks Salmon Rocks), and at Ricardo Point (all of which are within the EMBA). This is a common shoreline type for the Furneaux Island group in Bass Strait (also within the EMBA).

1.4.2.4 Inter-tidal Flats

This shoreline type has been defined as areas with predominantly mud-sized (<0.063 mm) particles, and also includes mixed sediments (e.g. sands, shell or gravel), where the mud fraction is dominant. These areas are also exposed to high tidal variation, including tidal flats, and are often associated with mangrove or saltmarsh environments.

Sheltered intertidal flats are composed primarily of mud with minor amounts of sand and shell. They are usually present in calm-water habitats, sheltered from major wave activity, and frequently backed by marshes like estuaries or bays. The sediments are very soft and cannot support even light foot traffic in many areas. There can be large concentrations of bivalves, worms, and other invertebrates in the sediments. They are heavily used by birds for feeding (NOAA, 2010).

Sheltered intertidal flats occur at Corner Inlet and Nooramunga Marine and Coastal Parks. Bare sediment occurs at Mallacoota Inlet, Wingan Inlet, Sydenham Inlet - Bemm River and Mud Lake.

1.4.2.5 Mangroves

Along the Gippsland coast, mangroves can be found in Corner Inlet and Nooramunga Marine and Coastal Park and more recently have also been found in Cunningham Arm at Lakes Entrance (Lucieer V, 2017).

The roots and trunks are intertidal, with only the lowest leaves inundated by high tide. The width of the forest can range from one tree to many km. The substrate can be sand, mud, leaf litter, or peat, often as a veneer over bedrock. They are highly productive, serve as nursery habitat, and support a great diversity and abundance of animal and plant species (NOAA, 2010).

1.4.2.6 Saltmarsh

Saltmarshes are terrestrial halophytic (salt-adapted) ecosystems that mostly occur in the upper-intertidal zone and are widespread along the coast of Victoria and NSW. They are typically dominated by dense stands of halophytic plants such as herbs, grasses, and low shrubs. Depending on location and inter-annual variations in rainfall and runoff, associated vegetation may include species tolerant or adapted to salt, brackish, or even tidal freshwater conditions. 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 (NOAA, 2010).

Saltmarsh is found along the coast throughout the EMBA, although is most extensive behind the sand dunes of Ninety Mile Beach in Gippsland (Boon, 2011).

Salt marshes can be found behind Mallacoota Entrance to Lake Barracouta, Wingan Inlet, inside Cann River Estuary, Tamboon Inlet, Sydenham Inlet (Bemm River Estuary and Mud Lake), Dock Inlet, inside Snowy River Estuary, Lake Tyers Estuary, and inside Lakes Entrance - Gippsland Lakes Ramsar Site. In southern NSW between Towradgi Creek about 40 km north of the Victorian border there are approximately 12 km² of saltmarsh spread over 62 estuaries (Daly, 2013). These include the areas of Shoalhaven River, Carama Creek, Clyde River, Tomaga River and Moruya River, Tuross Lake, Wapengo Lake, Bega River, Merimbula Lake and Wonboyn River (Creese R.G, 2009).

1.4.3 Plankton

Plankton species, including both phytoplankton and zooplankton, are key component in oceanic food chains.

Phytoplankton are autotrophic planktonic organisms living within the photic zone that spend either part or all of their lifecycle drifting with the ocean currents. They are the start of the food chain in the ocean (McClatchie, 2006). Phytoplankton communities are largely comprised of protists, including green algae, diatoms, and dinoflagellates (McClatchie, 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, 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. Seasonal variation in phytoplankton (via chlorophyll-a concentrations) has been demonstrated in Australian waters from the analysis for MODIS-Aqua sensor imagery (Figure 1-21).

Phytoplankton biomass ranges across Bass Strait (integrated over 0 - 100m depth), from about 1.6 µg chlorophyll a/L from shallow to 0.1 µg/L in deeper waters (Gibbs, 1991). Phytoplankton biomass rapidly drops off with water depth, to about 0.1 µg/L below 100 m, due to diminishing light penetration.

Zooplankton is the faunal component of plankton, comprised of small protozoa, crustaceans (such as krill) and the eggs and larvae from larger animals. 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). Zooplankton biomass is higher in shallow waters of Bass Strait (16.1 mg/m³ dry weight off Mallacoota and 15.5 mg/m³ off Seaspray), dropping to between 1.2 - 2.1 mg/m³ further offshore (integrated over the top 50 m of the water column), near the deepest regions of the EGBPA (Gibbs, 1991). As with phytoplankton, zooplankton biomass appears to be higher in the shallow waters of the shelf. Copepods dominate the species encountered (Chaloupka, 1982).

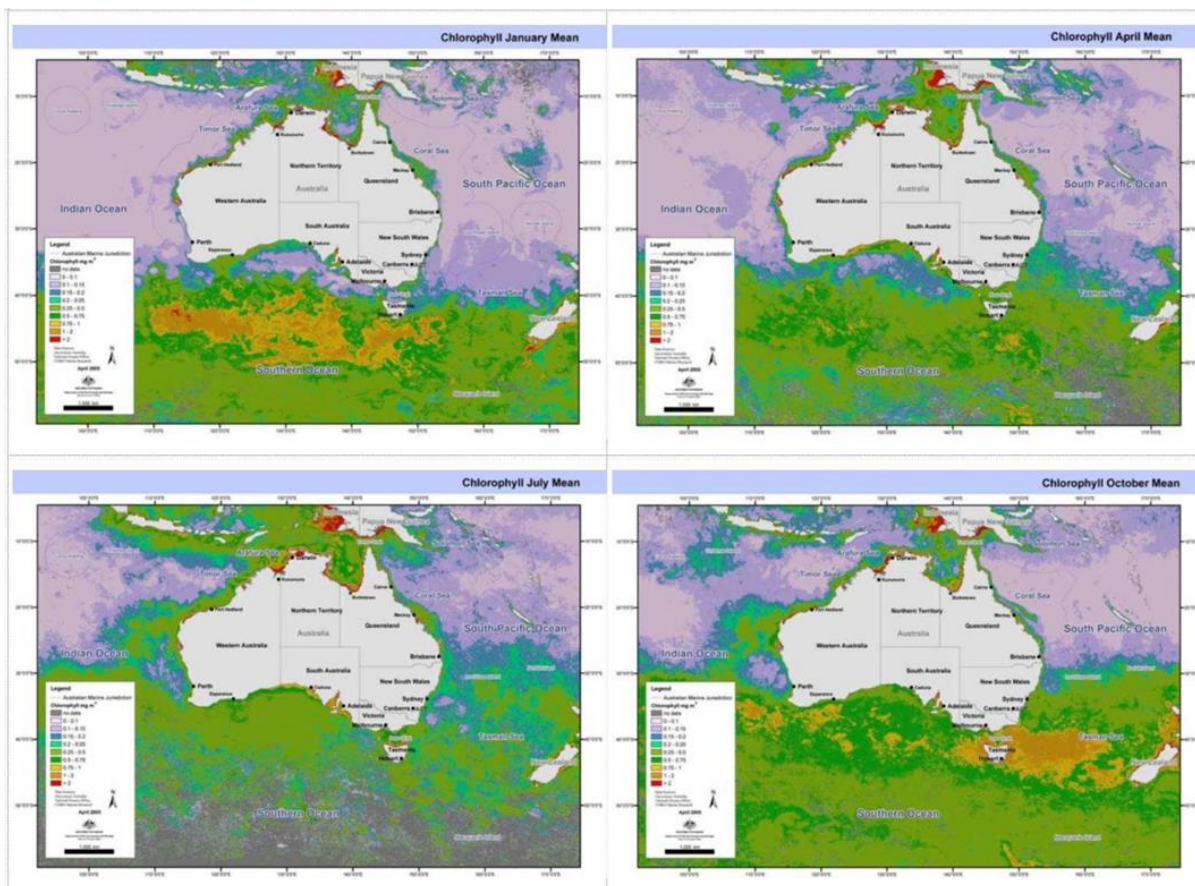


Figure 1-21 Seasonal phytoplankton growth from MODIS ocean colour composites (McClatchie, 2006)

1.4.4 Fish, Sharks and Rays

Fish species detected by the PMST within the EMBA are listed in Table B-1 and B-2 in Appendix B. Only fish, sharks and ray species that are threatened are discussed further within this section. The full PMST report for the EMBA can be found in Appendix D.

It is estimated that there are over 500 species of fish found in the waters of Bass Strait, including a number of species of importance to commercial and recreational fisheries (LCC, 1993). Fish species commercially fished within the EMBA are listed in Section 1.6.2, 1.6.3, 1.6.4, and 1.6.5.

There are 66 fish species listed under the EPBC Act with potential to occur within the EMBA (see Table B-1 and B-2 in Appendix B). Forty-two (42) of the 66 fish species identified in the EPBC Act PMST (63%) are Syngnathids, which includes seahorses, seadragon, pipehorse and pipefish. Syngnathidae are mostly benthic on coastal reefs, amongst marine algae, seagrass beds, or on sandy and rubble substrates and in caves and crevices. A few species are found offshore amongst floating *Sargassum* algae (Bray, 2021) they can be found in waters less than 50 m deep and are sometimes recorded in deeper offshore waters. It is likely that Syngnathidae species will occur in coastal reefs, marine algae, seagrass beds, sandy and rubble substrates and caves and crevices sites throughout the EMBA.

1.4.4.1 Handfish

Two species of handfish were detected by the PMST: the red handfish (*Thymichthys politus*) which is listed a critically endangered under the EPBC Act and the Ziebell’s handfish (*Brachiopsilus ziebelli*) which is listed as vulnerable under the EPBC Act. Both species have a known distribution in Tasmania only.

The red handfish is a small, slow moving benthic fish that is known to inhabit a small geographic area in the coastal waters of southeast Tasmania. It appears that the red handfish has undergone a recent marked decline in both distribution and abundance (DSEWPC, 2012a). No specimens were recorded during surveys in 2005 and efforts to locate red handfish at sites where they were previously known to exist are reported to have failed (DSEWPC, 2012a). The most recent sightings of the species were made in Primrose Sands (outside of

the EMBA) in 2010 (DSEWPC, 2012a). Given this species habitat and presence, it may occur in the areas where the EMBA interprets the eastern and northern coast of Tasmania.

Ziebell's handfish are only known to occur in eastern and southern Tasmania - in the southern parts of the D'Entrecasteaux Channel, Cox Bight in southwest Tasmania, and the Forestier and Tasman Peninsulas, and off Bicheno, eastern Tasmania (DCCEEW, 2023e). The species inhabits rocky areas and soft bottoms, often near rocky patches with sponge and macroalgal communities. Females lay their egg masses around sponges in depths of about 20 m. On hatching, the young settle directly to the bottom near the egg mass (DCCEEW, 2023e).

The main identified threat applies to both species of handfish, being 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 (DSEWPC, 2012a). Given its known distribution, Ziebell's handfish may be present in the areas where the EMBA interprets the eastern coast of Tasmania.

1.4.4.2 Black rockcod

The black rockcod (*Epinephelus daemeli*) is listed as vulnerable under the EPBC Act. The black rockcod is a large cod species distributed in warm temperate to temperate marine waters of south-eastern Australia, from southern Queensland to Mallacoota in Victoria, and rarely south of this point (DSEWPC, 2012b).

The species inhabits caves, gutters, and crevices generally to depths of 50 m, with juveniles found inshore. Individuals are highly territorial and have small home ranges (DSEWPC, 2012b). The black rockcod is a protogynous hermaphrodite, meaning it changes sex from female to male during its life cycle. The species has declined in number due to angling and spearfishing (DSEWPC, 2012b). Given their known distribution, the black rockcod may occur in suitable habitat within the EMBA (north of Mallacoota) and are likely to be present within the Elizabeth and Middleton Reefs Marine National Nature Reserve (within the EMBA) which supports an abundant population of black cod (DSEWPC, 2012b).

1.4.4.3 Eastern dwarf galaxias

The eastern dwarf galaxias (*Galaxiella pusilla*) is listed as Vulnerable under the EPBC Act. Habitat suitable to the dwarf galaxias is slow flowing and still, shallow, permanent, and temporary freshwater habitats such as swamps, drains and the backwaters of streams and creeks, often (but not always) containing dense aquatic macrophytes and emergent plants (Saddler, 2010) (DELWP, 2015a).

There are 46 rivers and wetlands that are listed in the Dwarf Galaxias Action Statement (DELWP, 2015a) as being important to the species, the only listed waterway within the EMBA is the Merriman Creek. Therefore, the eastern dwarf galaxias may be encountered in the EMBA if the Merriman Creek is open to the ocean at the time of the spill.

1.4.4.4 White's seahorse

The White's seahorse (*Hippocampus whitei*) is listed as endangered under the EPBC Act and is endemic to NSW and QLD in eastern Australia (TSSC, 2020). White's seahorse is a small (maximum length approximately 16 cm), long snouted seahorse which is highly variable in colour with their colouration known to change depending on the habitat they are found in. The species is known to live in the wild for up to 5-6 years (TSSC, 2020).

White's seahorses are known to occur in water depths between 1 - 15 m and are known to occur in estuaries from St Georges Basin, NSW (in proximity to the EMBA) to Hervey Bay, QLD (outside of the EMBA). The White's seahorse is found utilising a wide range of habitat types (both natural and artificial). They prefer more complex habitats, believed to provide better protection and more available food resources (TSSC, 2020). The species displays strong site fidelity, with tagged males occurring on the same site for up to 56 months and females 49 months, with no seahorse ever recorded moving between sites. Individuals are not known to move far, as the largest distance a tagged animal was found to travel was only 70 m (TSSC, 2020).

The major threat to the White's seahorse is loss habitat across its range followed by cleaning of artificial habitats (protective swimming nets) within the Sydney region (TSSC, 2020). Due to the known habitat preferences of the White's seahorse, the species may be encountered by the EMBA within the coastal regions of NSW from St Georges Basin to Port Macquarie.

1.4.4.5 Orange roughy

The orange roughy (*hoplostethus atlanticus*) was listed as conservation dependent under the EPBC Act in 2006, within Australian waters with most stocks reported to be well below 20% of estimated pre-fishing equilibrium biomass and closed to targeted fishing (DCCEEW, 2023e).

The orange roughy is a commercially important demersal fish species that is found in ridge and slope waters 180 -1,800 m deep (DCCEEW, 2023e). Orange roughy are very long lived, very slow to mature and have low fertility relative to other bony fishes. Ageing studies show that they do not mature until their mid-20's to mid-30's and may live to 150 years of age.

Although widespread, orange roughy migrate hundreds of km to form spawning aggregations over seamounts between June and August in the Southern Hemisphere (DCCEEW, 2023e). They are synchronous spawners and form dense spawning and feeding aggregations. Recovery of the species is threatened by commercial trawl fishing. Given its habitat preferences, the orange roughy may occur in deep waters of the EMBA.

1.4.4.6 Australian grayling

The Australian grayling (*Prototroctes maraena*) is listed as Vulnerable under the EPBC Act. The Australian grayling is a dark brown to olive-green fish that is approximately 19 cm in length. The species typically inhabits the coastal streams of NSW, Victoria, and Tasmania, migrating between streams and the ocean (Backhouse, 2008). The species spends most of its life in freshwater (DELWP, 2015b), and migrates to lower reaches of rivers to spawn in autumn (Gomon, 2020), though timing is dependent on many variables including latitude and varying temperature regimes (Backhouse, 2008), with increased stream flows also thought to initiate migration (DELWP, 2015b).

Threatening processes to this species include barriers to movement, river regulation, poor water quality, siltation, introduced fish, climate change, diseases, and fishing (Backhouse, 2008). Several rivers intersected by the EMBA (at their mouths, when open) are listed as important locations for the species (DELWP, 2015b). The species may therefore be present in the EMBA in the relatively rare event that creek and river mouths are open, and the species is spawning.

1.4.4.7 Eastern gemfish

The eastern gemfish (*Rexea solandri*) is listed as conservation dependent under the EPBC Act. Gemfish are found throughout southern Australian temperate waters. In Australia, the eastern gemfish are distributed from Cape Moreton, southern Queensland, along the east coast to Bass Strait and the waters off Tasmania.

Eastern Gemfish are mesopelagic and inhabit deeper continental shelf habitats and upper slope waters from 100 - 700 m (down to 1,254 m) but are generally found in waters about 250 - 500m deep. Historical and ongoing commercial fishing is the highest threat to the eastern gemfish. This species is generally caught close to the seabed, but the fish are likely to move into mid-water at times, larvae occur in shallow to very shallow waters. Gemfish are carnivorous and feed close to the ocean floor on other fish, primarily Macrouridae (whiptails). Due to the deep water distribution of this species, it may be present with the eastern sections of the EMBA.

1.4.4.8 Blue warehou

The Blue warehou (*Seriolella brama*) is listed as conservation dependent under the EPBC Act. Blue warehou (*seriolella brama*) is a benthopelagic species found in southern Australia where it inhabits continental shelf and slope waters. Adults can be found at depths from 50-300 m. Blue warehou are schooling fish and usually aggregate close to the seabed and juveniles can sometimes be found schooling close to the surface in estuaries, often in association with jellyfish. This species is commercially important and formally managed under the Blue Warehou Stock Rebuilding Strategy (AFMA, 2014). Blue warehou may occur in the EMBA.

1.4.4.9 Southern bluefin tuna

The southern bluefin tuna (*Thunnus maccoyii*) (SBT) is listed as conservation dependent under the EPBC Act. SBT are recorded from every Australian state but absent from the coasts of the Northern Territory and northern Queensland, and very rare in central and western Bass Strait (DCCEEW, 2023e). Elsewhere the species is circum-global in temperate and cold temperate waters of the southern hemisphere. SBT breed between October and March in an area off Java, Indonesia and migrate down the WA coast during their first year (DCCEEW, 2023e). Some fish then head west into the Indian Ocean, while others head eastwards into the GAB. SBT are an extremely

valuable and highly prized commercial species, with the Australian SBT industry estimated to be worth more than \$100 million annually.

Historically the species was heavily fished, with catches reaching 80,000 tonnes per year during the 1960s, but by the 1980s catches had halved, resulting in the implementation of fishing quotas. From September to March, schools of mostly immature fish (aged 2 - 4 years) are caught in purse seine nets in the GAB (DCCEEW, 2023e) and then slowly towed to Port Lincoln in SA where they are transferred to floating sea cages anchored to the seafloor. More than 95% of Australia's SBT catch is caught in this method (DCCEEW, 2023e). Commercial fishing is the major threat to SBT (DCCEEW, 2023e). SBT may be encountered in the EMBA.

1.4.4.10 Grey nurse shark (east coast population)

The grey nurse shark (*Carcharius taurus*) (eastern population) is listed as critically endangered under the EPBC Act due to commercial fishing, spearfishing, and protective beach meshing (TSSC, 2001). The grey nurse shark was historically widespread in sub-tropical and warm temperate seas and previously recorded from all Australian states except Tasmania (TSSC, 2001).

The species currently has a broad inshore distribution throughout sub-tropical to cool temperate waters on the continental shelf, with separate east coast and west coast populations (DoE, 2014b). The east coast population extends from central Queensland to southern NSW, occasionally as far south as the NSW/Victoria border (DoE, 2014b), which coincides with the BIAs for their foraging, migration and reproduction, which is intercepted by the EMBA and shown in Figure 1-22 .

Preferred habitat for grey nurse sharks is inshore rocky reefs or islands, generally aggregating near the seabed in water depths of 10 - 40 m in deep sandy or gravel filled gutters, or in rocky caves border (DoE, 2014b). There are no known aggregation sites located off the Victorian coast border (DoE, 2014b) however, the EMBA does intersect with the reproduction BIA within the coastal waters between Sydney and Point Macquarie (Figure 1-22). Given the current distribution of the grey nurse shark and the known breeding sites, the species may occur within the EMBA.

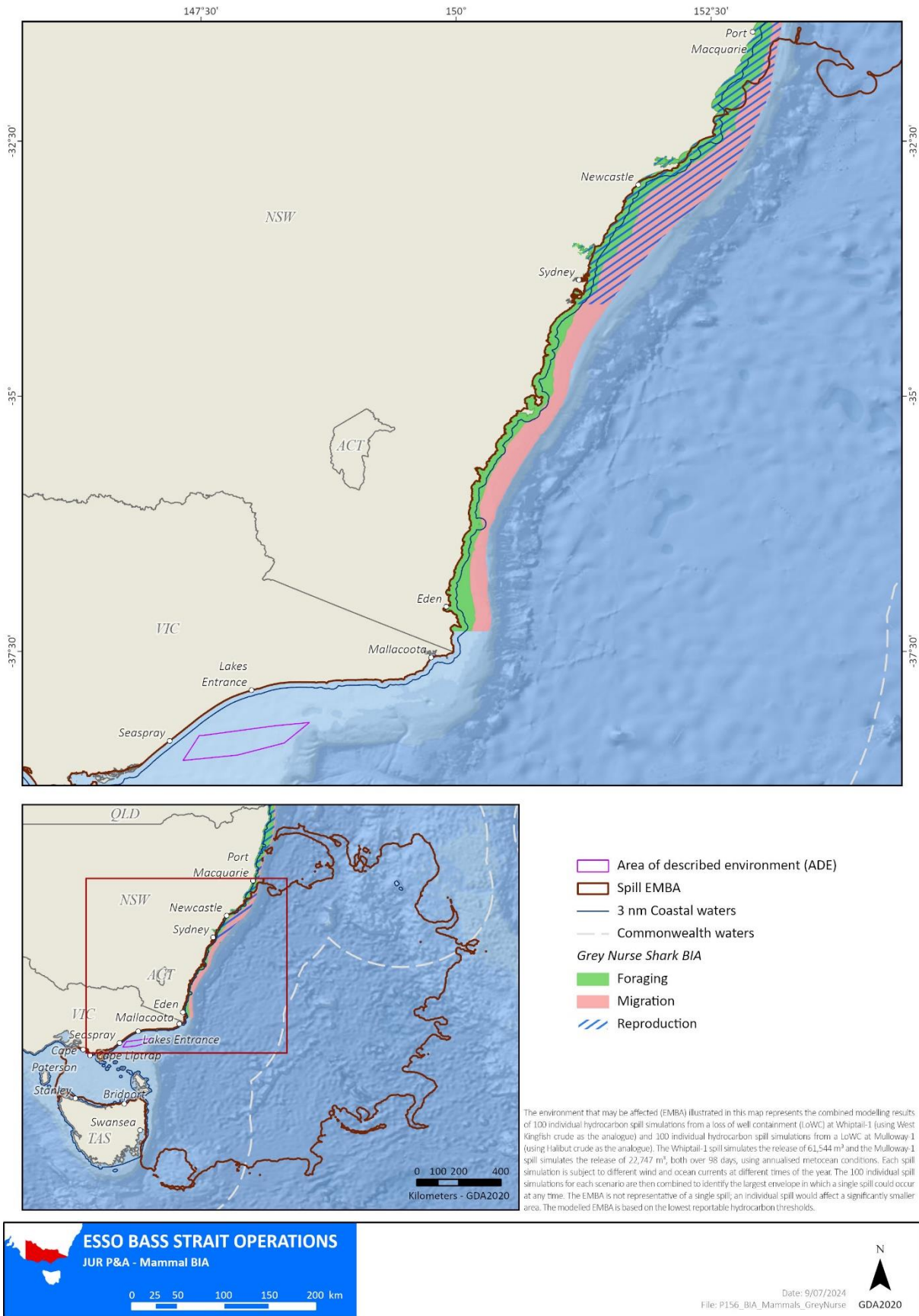


Figure 1-22 Grey nurse shark BIA's intersected by the EMBA

1.4.4.11 Great white shark

The great white shark (*Carcharodon carcharias*) is listed as vulnerable under the EPBC Act. The great white shark is widely distributed and located throughout temperate and sub-tropical waters, with their known range in Australian waters including all coastal areas except the Northern Territory (DSEWPC, 2013b). Studies of great white sharks indicate that they are usually solitary animals, largely transient and only temporarily resident (e.g., days to weeks) in areas it inhabits (DSE, 2003) (DSEWPC, 2013b). However, individuals are known to return to feeding grounds on a seasonal basis (Klimley, 1996).

The species 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. Observations of adult sharks are more frequent around fur seal and sea lion colonies, including Wilsons Promontory and the Skerries (both within the EMBA and is also reflected by the foraging BIA see Figure 1-23) (DSE, 2003). Juveniles are known to congregate in certain key areas including the Ninety Mile Beach, Lakes Entrance, Gippsland Lakes and Corner Inlet where a BIA for reproduction is overlapped by the EMBA (Figure 1-23). The EMBA also overlaps an aggregation BIA for the species located in the coastal waters north of Newcastle. (Bray D. , 2023) indicates that Corner Inlet may be an important nursery area for the eastern population of great white sharks, mostly from mid-summer through to autumn (DSEWPC, 2013b).

Key threats to the species, as listed in the White Shark Recovery Plan (DSEWPC, 2013b) and Great White Shark 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), none of which will take place during the activity. Similarly, the activity will have no impact on the 10 objectives for protection listed in the plan. Given their transitory nature and the proximity of known congregation areas, great white sharks may occur within the EMBA.

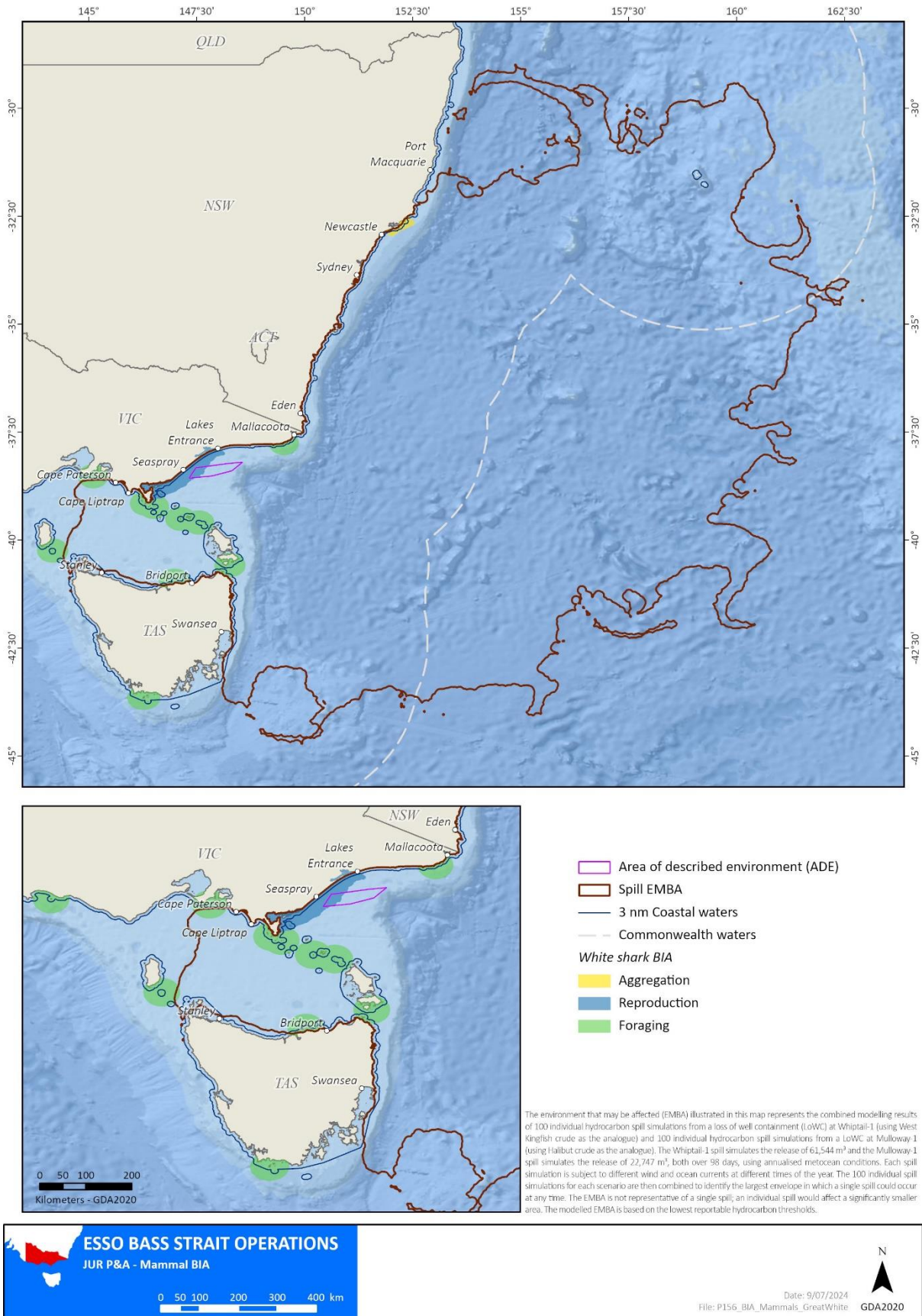


Figure 1-23 Great white shark BIAs intersected by the EMBA

1.4.4.12 Harrison's dogfish

Harrison's dogfish (*Centrophorus harrissoni*) is listed as conservation dependent under the EPBC Act. In Australian waters, Harrison's dogfish is distributed off the Clarence River, NSW, to off South East Cape, Tasmania, and from Fraser Seamount, Queensland, to Taupo Seamount, NSW (DCCEEW, 2023e). The species prefers water depth ranges from 200 – 1,050 m.

The main threat to southern dogfish in Australian waters was population reduction caused by past fishing pressure in both state and Commonwealth-managed commercial fisheries operating on the upper-slope (TSSC, 2013). Harrison's dogfish populations are estimated to have declined by more than 90% in parts of their range off southern NSW and eastern Victoria. As a result, the species was listed as Conservation Dependent in June 2013. This species habitat preferences indicates that it is likely to occur in the EMBA.

1.4.4.13 Little gulper shark

The little gulper shark (*Centrophorus uyato*) is listed as conservation dependent under the EPBC Act. The little gulper shark is distributed along the continental slope of southern Australia from off Forster (NSW) to Bunbury (WA), including Tasmania, in depths of 200 – 700 m, but usually in depths below 400 m (DCCEEW, 2023e).

Little gulper sharks undertake day-night migrations across their depth range from relatively deep daytime residence depths (1,000 m) to shallower night-time feeding depths (to 200 m). This species feeds mainly on fish, crustaceans and squid. It migrates up gullies on the continental slope to feed at night on mesopelagic fish that have migrated from deeper waters. The main threat to the little gulper shark in Australian waters is population reduction caused by past fishing pressure in both state and Commonwealth-managed commercial fisheries operating on the upper-slope (TSSC, 2013). Species in genus *Centrophorus* are vulnerable to over-exploitation due to the fact that they are long-lived, late to mature and have small litters (DCCEEW, 2023e). This species habitat preferences indicates that it is likely to occur in the EMBA.

1.4.4.14 Whale shark

The whale shark (*Rhincodon typus*) is listed as vulnerable under the EPBC Act and is the world's largest fish and one of the only three filter feeding shark species (TSSC, 2015a). They have a broad distribution in warm and tropical waters of the world, and in Australia are known only to occur on the west coast of WA, with a feeding aggregation occurring off the Ningaloo Reef between March and July each year (TSSC, 2015a). Isolated records exist of whale sharks off NSW, Victoria and SA. Because this species is not known to migrate through Bass Strait, and the lack of known distribution in Victoria, Tasmania, and NSW, it is highly unlikely to occur within the EMBA.

1.4.4.15 Scalloped hammerhead

The scalloped hammerhead (*Sphyrna lewini*) is listed as conservation dependent under the EPBC Act but is currently under a threatened listing assessment which was due 30 April 2022, but has not been updated since. The scalloped hammerhead is a relatively large, fusiform-bodied, moderately slender shark with a circum-global distribution in tropical and sub-tropical waters. This species has a strong genetic population structuring across ocean basins as it rarely ventures into or across deep ocean waters but ranges quite widely over shallow coastal shelf waters (TSSC, 2018).

Within Australian waters the scalloped hammerhead extends from NSW (around Wollongong, where it is less abundant), around the north of the continent and then south into WA. Due to the species distribution, the scalloped hammerhead may be encountered within the area of the EMBA that extends up to Sydney.

1.4.4.16 School shark

The school shark is listed as conservation dependent under the EPBC Act. The species is a widespread mainly coastal and bottom associated shark found in temperate areas over the continental shelf to about 800 m on the continental slope (DCCEEW, 2023e). Juveniles are often found in shallow, inshore bays of Victoria and Tasmania. School sharks also occur well offshore in the Tasman Sea. Although usually found near the bottom, the species ranges through the water column even into the pelagic zone (DCCEEW, 2023e).

The species feeds on bony fishes (bottom-dwelling and pelagic species), squid and octopus. Small juveniles feed on crustaceans, polychaete worms, gastropods, and echinoderms. The species was fished throughout its range and heavily exploited due to the excellent quality of its flesh for eating and its oil (DCCEEW, 2023e). In addition, targeted fishing of juveniles and degradation of nearshore nursery sites has been linked to population declines

(DCCEEW, 2023e). The species is currently the focus of the School Shark Rebuilding Strategy (AFMA, 2015), which aims to rebuild the species to 40% of its pre-exploitation levels within a biologically relevant timeline, by closing areas to protect pups and breeding age school sharks as well as preventing targeted fishing of the species. School sharks are likely to be present in the EMBA.

1.4.5 Cetaceans

Cetaceans are a widely distributed and diverse group of carnivorous, finned, aquatic marine mammals. They comprise whales, dolphins and porpoises. Cetaceans are generally found in the ocean but can also inhabit river systems.

There are 26 whale, and 16 dolphin species (or species habitat) that may occur within the EMBA see Table B-4 in Appendix B. A list of the conservation advice and/or recovery plans, with relevant key threats and management actions, is shown in Table 1-3. Only cetacean species that are threatened and/or are migratory or have known BIAs within the EMBA and are discussed further.

There are several pelagic dolphins that may occur in the EMBA. The population size of these species is not known however none are considered to be rare. No specific conservation or listing advice exists and their distribution has not been specifically defined. All species feed on pelagic fish, squids, octopus, shrimps, and other marine fauna taken at depths exceeding 250 m. The extent of occurrence is large in all cases, estimated to be greater than 20,000 km². All are tropical to subtropical species (occasionally temperate) with distribution varying depending on water temperature and flow of warm currents.

1.4.5.1 Southern Right Whale

The SRW (*Eubalaena australis*) is listed as endangered under the EPBC Act in Australia. SRWs were depleted to less than 300 individuals globally due to commercial whaling in the 19th and 20th centuries (Tormosov, Mikhailiev, Best, Zemsky, & Sekiguichi, 1998). They were protected from whaling in 1935 however, due to illegal whaling in the 1970s and because southern right whales have a slow rate of increase (7% per annum (p.a.)) compared to other marine mammals, their numbers remain low (IWC, 2013). Global abundance estimates are 13,000 for the species, across key wintering grounds in South Africa, Argentina, Australia and New Zealand.

POPULATION

The Australian population of SRW is divided into two sub-populations due to genetic diversity (Carroll, 2011); (Baker, Patenaude, Bannister, Robins, & Kato, 1999) and different rates of increase (DCCEEW, 2024). The western sub-population occurs predominantly off WA and SA (DCCEEW, 2024). This sub-population comprises most of the Australian population and is estimated at 3,200 individuals increasing at an annual rate of approximately 6% p.a. (Smith, et al., 2019).

The eastern sub-population occurs off coastal waters of Victoria, Tasmania, New South Wales, and Queensland (DCCEEW, 2024). In Victoria, there is a regular aggregation area in waters off Warrnambool at Logans Beach and increasing numbers of sightings along the Gippsland coast. There has also been relatively regular sightings along the south east coast of Tasmania (DCCEEW, 2024). The eastern sub-population is estimated at less than 300 individuals and is showing no signs of increase (Bannister J. L., 2017). A rate of around 7% p.a. is considered the maximum biological rate of increase for SRW (IWC, 2013). Connectivity between the two populations is unknown however, some limited movement between the two areas has been recorded (Burnell, 2001); (Charlton, 2017); (Pirzl, Patenaude, Burnell, & Bannister, 2009).

DISTRIBUTION

(SRWs) have a circumpolar distribution in the southern hemisphere, Reproductive (calving and nursing) areas appear to be exclusively coastal, occurring either off continental landmasses or oceanic islands, and are occupied during late autumn, winter, and early spring (DCCEEW, 2024). . . Nursery grounds are occupied from May to October, with female-calf pairs generally staying in the area for two to three months (Charlton, 2017). Calving itself usually occurs in very shallow (<10 m depth) waters. Other population classes stay in the nursery grounds for shorter and variable periods of time; there is typically a lot of movement along the coast, and thus habitat connectivity is important for this species. The summer offshore distribution and migration routes of SRW largely is unknown but is known to include directly southern and western migration pathways but may include offshore habitat where mating (Mackay, 2015).

BIAS

According to the Australian Marine Spatial Information System (AMSIS), species BIAs spatial data has undergone revision. The revised data identifies two BIAs for the SRW; reproduction (May – September) and migration (April – October), both of which are overlapped by the EMBA (Figure 1-24).

- Reproduction – is spatially defined along the entire coast of Victoria including Port Phillip Bay and Western Port Bay and along the entire coastline of Tasmania as well as majority of the NSW coastline up to Burnett Heads in Queensland. Reproduction also occurs in areas along the SA and WA coast. According to the BIA Protocol category definitions (DCCEEW, 2023f), reproduction BIAs are areas known or likely to be regularly or repeatedly used by individuals or aggregations of a species for reproduction or to provide refuge, or other advantage to young. The EMBA overlaps with 13.5% of the reproduction BIA (Figure 1-24). According to the National Recovery Plan for the Southern Right Whale (DCCEEW, 2024) the reproduction BIA also represents habitat critical to survival for the southern right whale.
- Migration – covers all Commonwealth waters in southern Australia from Naturaliste, WA to the Victorian/NSW border, including the GAB and all of Bass Strait. Migration also mirrors the reproduction BIA along the coast in NSW and Queensland and exists along the west coast of WA. According to the BIA Protocol category definitions (DCCEEW, 2023f), migration BIAs are areas known or likely to be regularly or repeatedly used by individuals or aggregations of a species for undertaking seasonal or other temporal movements that contribute to connectivity with other functionally important areas (DCCEEW, 2023f). The EMBA overlaps with 10.9% of the migration BIA (Figure 1-24).

Southern right whales are likely to be encountered within the EMBA.

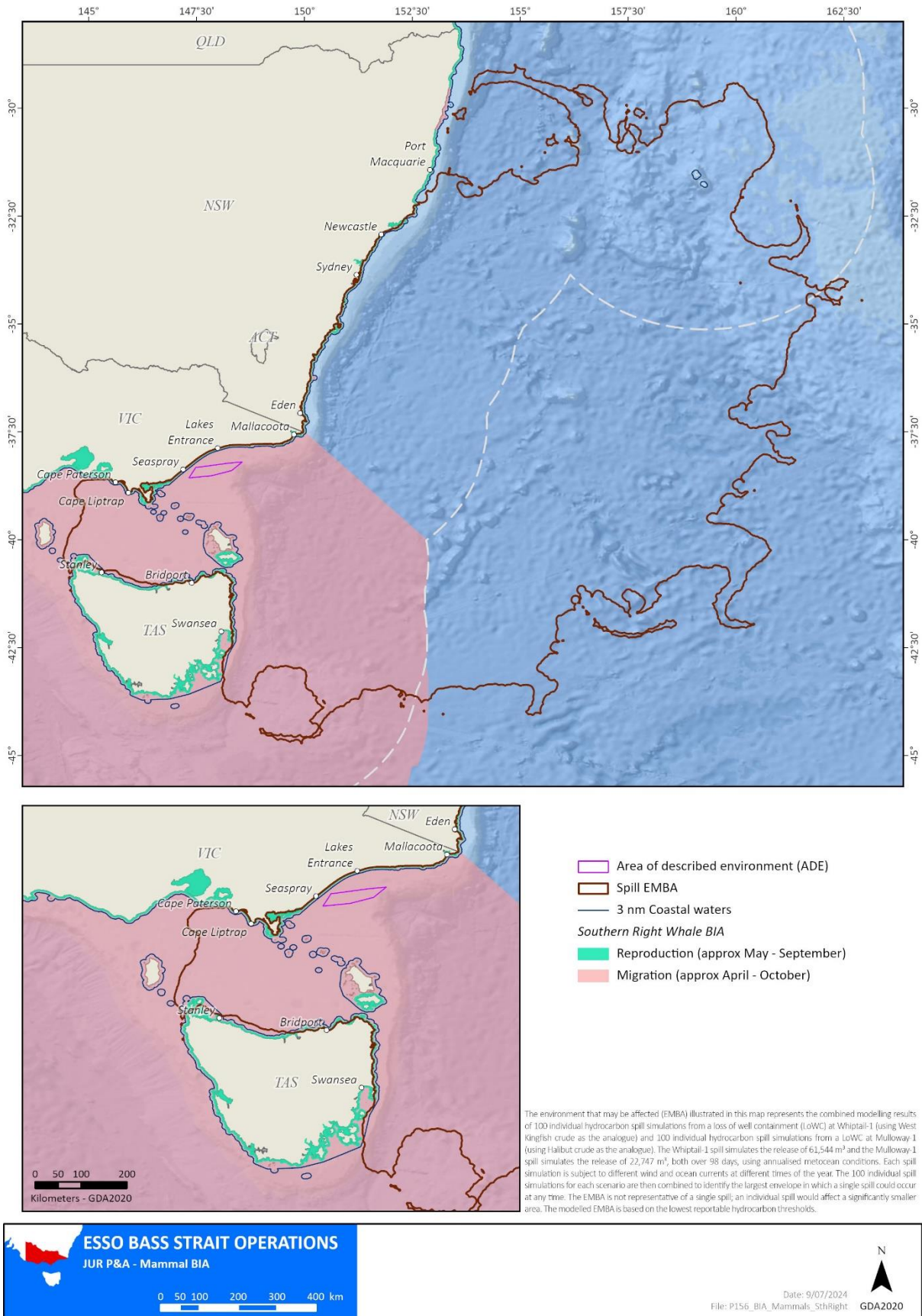


Figure 1-24 SRW BIAs intersected by the EMBA

1.4.5.2 Blue Whales

The blue whale (*Balaenoptera musculus*) has four subspecies, two of which occur within Australian waters, including the Antarctic blue whale (*B. m. intermedia*) and the pygmy blue whale (*B. m. breviceuda*) (Rice 1998, in (Department of the Environment, 2023).

The pygmy blue whale (PBW) has five population groups, two of which are found in the Southern Hemisphere. Figure 1-25 summarises the known and predicted ranges of the species and populations around Australia and New Zealand (NZ) and their likely presence in Esso's areas of operation in eastern Bass Strait.

Simplified guide to blue whale presence in Australia

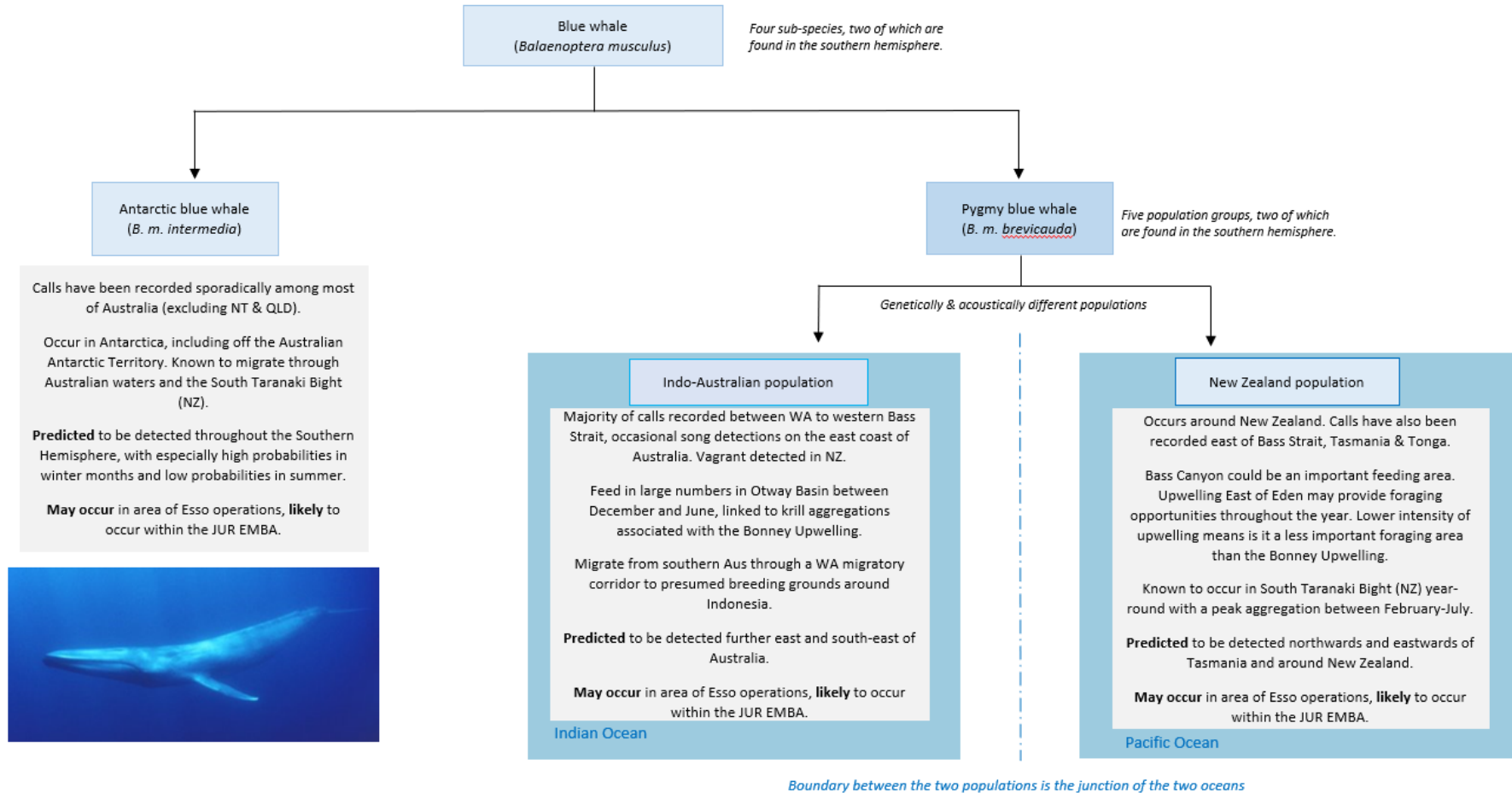


Figure 1-25 Simplified guide to blue whale presence in Australia

DISTRIBUTION

Long term passive acoustic recorders set by McCauley et al. (2018) found Antarctic blue whale calls along the entire southern Australian coast, while calls from the NZ PBW population occur predominantly eastward of Bass Strait, and calls from the Indo-Australian PBW population were heard west of Bass Strait. The Indo-Australian PBW population wasn't recorded on the east Australian coast or east of Bass Strait and the New Zealand PBW population was always heard in the Bass Strait recordings, and only ever heard as far west as Portland in Victoria. The Antarctic blue whale was recorded at all sites south of 19°S (McCauley, R.D., Gavrilov, A.N., Jolliffe, C.D., Ward, R. and Gill, P.C., 2018).

Balcazar et al. (2015) suggests that the Australian continent acts as a geographic boundary, separating Indo-Australian and NZ PBW acoustic populations at the junction of the Indian and Pacific Ocean basins (Balcazar, et al., 2015). The distribution of PBW in the Australian region is illustrated in Figure 1-26. There are few contemporary records of blue whales in the Gippsland region. However, recent scientific literature suggests that PBW populations are capable of travelling great distances far beyond their expected range (Barlow, 2023). This concept that blue whales can extend beyond their current range is corroborated by Branch et al (2023), who modelled the predicted detection range for the Antarctic blue whale and PBW populations. Findings from Branch et al (2023) and Barlow et al (2023) are discussed further within the population sub-headings in this section.

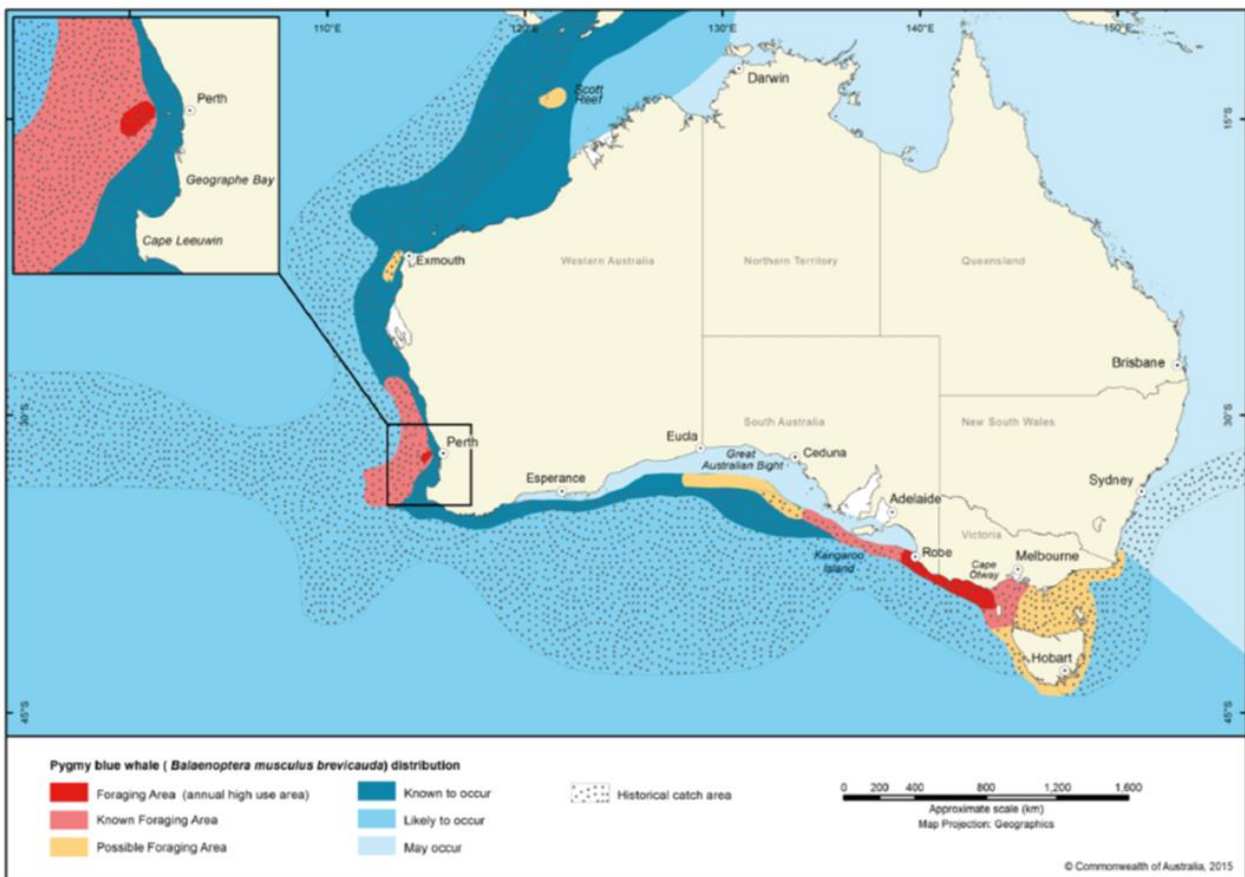


Figure 1-26 Distribution and foraging areas for the PBW (DoE, 2015b)

DIET

Blue whales have the highest known prey requirements, consuming up to two tonnes of krill per day (DoE, 2015b). Krill is the key to understanding the ecology and behaviour of blue whales. Krill is sensitive to temperature and migrates vertically and horizontally to maintain optimal positioning with respect to nutrients, often being found along thermal fronts and thermoclines. Krill abundance in a given season may be linked to oceanographic conditions of the previous year. The krill species, *Nyctiphanes australis*, frequently swarm at or near the surface, making it easily available to foraging blue whales. It can also be found at depth, where blue whales must dive to search and consume it. Foraging is energetically expensive for blue whales, which must regularly find sufficient food to balance their enormous energy requirements (Gill., 2020). There are two important seasonal feeding aggregations areas known in Australia where large numbers of PBW have been recorded: the Bonney Coast Upwelling KEF and adjacent waters off South Australia (SA) and Victoria (located 230 km west of the EMBA); and the Perth Canyon KEF and adjacent waters off WA (located over 2,800 km west of the EMBA). Prominent surface upwelling commonly occurs west of Portland where the shelf is narrow (the Bonney Upwelling); whereas on the broader shelf between Portland and King Island, upwelling is usually subsurface, with cooler upwelled water beneath a warmer surface layer (Gill., 2020).

ANTARCTIC BLUE WHALE

The Antarctic blue whale subspecies consists of one or more populations that feed off Antarctica during summer, and limited evidence suggests that some proportion migrate to subtropical latitudes of the Pacific and Indian Ocean to breed. They have been acoustically detected off the West and North coasts of Tasmania predominately from May to December. Based on the seasonality of recordings, these areas possibly form part of their migratory route, breeding habitat or a combination of the two (Commonwealth of Australia, 2015).

Results of continuous acoustic recordings that took place from January 2016 to February 2018 in the South Taranaki Bight in NZ (Barlow, 2023) noted that the South Taranaki Bight could be a migratory corridor for the Antarctic blue whale. The Antarctic blue whale is predicted to remain consistently within the Southern Hemisphere, with especially high probabilities in winter months (May-August), and low probabilities in summer (December-March) (Branch, 2023).

In light of the findings of Barlow (2023) and Branch (2023), it is likely the Antarctic blue whale will be present within the EMBA.

INDO-AUSTRALIAN PYGMY BLUE WHALE

The distribution and migration patterns of Indo-Australian PBW are relatively well understood in areas further west of the EMBA. Satellite tagging of Indo-Australian PBW by Double et al. (2014) and Möller, et al. (2020) has revealed that the Indo-Australian population migrates from southern Australian foraging grounds through a Western Australian migratory corridor to (presumed) breeding grounds in waters around Indonesia. The EMBA overlaps with 57.7% of the species foraging BIA (Figure 1-27). These areas form the eastern extent of the Bonney Upwelling (extending from Robe, SA into the Otway region) and Indo-Australian PBW are known to gather here in large numbers on a seasonal basis between December and June.

The time and location of the appearance of Indo-Australian PBW generally coincides with the upwelling of cold water in summer and autumn along the Bonney Upwelling and the associated aggregations of krill that they feed on (Gill, P. and M. Morrice, 2003). The Bonney Upwelling generally starts in the eastern part of the Great Australian Bight in November or December and spreads eastwards to the Otway Basin around February as southward migration of the subtropical high-pressure cell creates upwelling favourable winds. Sighting data indicates that blue whales are seasonally distributed (Gill P. M., 2011) (McCauley, R.D., Gavrilov, A.N., Jolliffe, C.D., Ward, R. and Gill, P.C., 2018).

Barlow (2023) detected the Indo-Australian PBW song during a 10-day period in January 2017, implying a rare vagrant occurrence. The modelling predicts that the distribution of the Australian PBW is further westward of WA, further south along the GAB and Indian Ocean, south eastward towards the Bass Strait and Tasmania and even as far as NZ (Branch, 2023).

In light of the findings of Barlow (2023) and Branch (2023), it is likely the Indo-Australian PBW will be present within the EMBA.

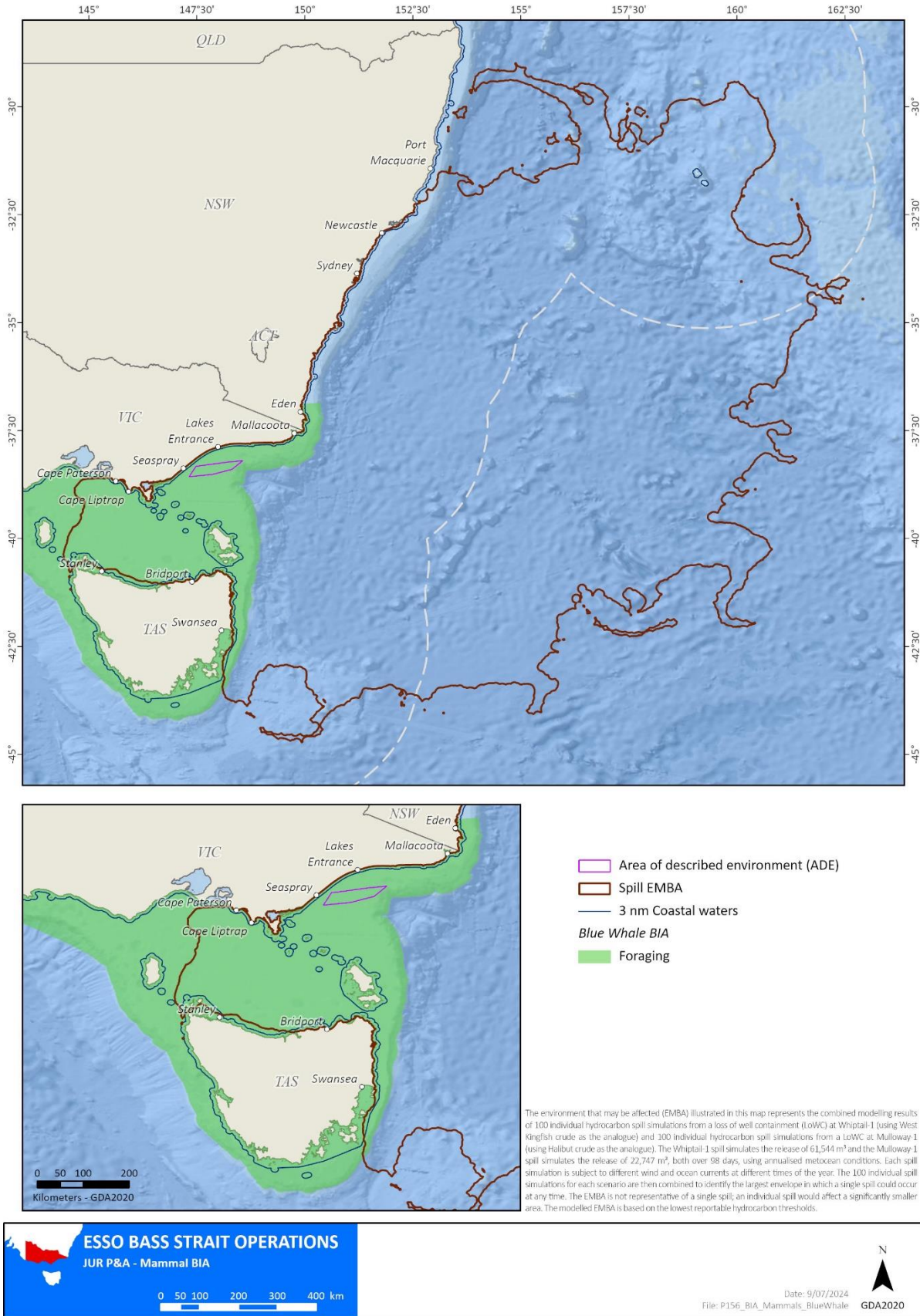


Figure 1-27 PBW foraging BIA intersected by the EMBA

NEW ZEALAND PYGMY BLUE WHALE

Relatively little is known about NZ PBW . Antarctic blue whales are known to co-occur with PBW around New Zealand. Antarctic blue whale detections peaked during austral winter and spring, indicating that NZ, and the South Taranaki Bight in particular, is a migratory corridor for them. Some Antarctic blue whale calls were also detected during the breeding season (September and October). Pygmy blue whale calls were highly concentrated in the South Taranaki Bight, particularly between March and May, suggesting that an aggregation may occur here (Warren, V., McPherson, C., Giorli, G., Goetz, K., & Radford, C, 2021).

The Upwelling East of Eden KEF is located within the EMBA and is a recognised upwelling system. Upwelling influence areas were mapped between September and May (austral spring, summer and autumn) each year for a period of 14 years (Sept 2002 to May 2016) along 4,500 km of the south-eastern coast of Australia using monthly MODIS sea surface temperature (SST) data (Huang & Hua Wang, 2019) .

The study confirmed that there were three seasonal/semi-seasonal upwelling centres: the Bonney coast upwelling; the Kangaroo Island upwelling; and the Eyre Peninsula upwelling, in the WVIC/SA coastal upwelling system. The NSW coastal upwelling system is a persistent/semi-persistent system occurring continuously from austral spring to autumn, although during mid to late autumn the upwelling may be either lacking or isolated and restricted to the coast. The intensity of the southern NSW/eastern Victorian (SNSW/EVIC) upwelling system, centred on the Eden upwelling, has a less distinct seasonal pattern (Figure 1-28) (Huang & Hua Wang, 2019).

Barlow (2023) states that despite extensive acoustic recordings in eastern Australia, Bass Strait and Tonga, the NZ population has rarely been being detected in these locations. The NZ PBW is anticipated to be distributed northwards and eastwards of Tasmania (including Bass Strait and the eastern coast of Australia), and around NZ (Branch, 2023).

In light of the findings of Barlow (2023) and Branch (2023), it is likely the NZ PBW is present within the EMBA.

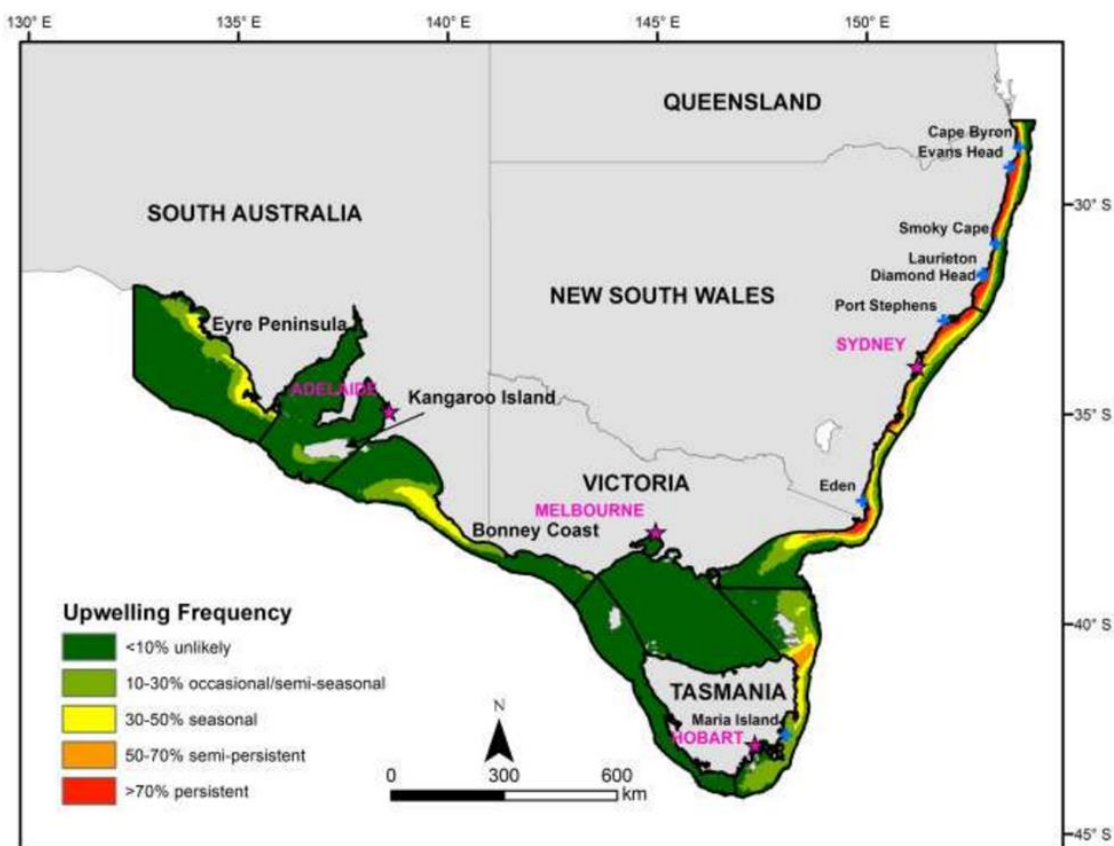


Figure 1-28 Upwelling frequency (Huang & Hua Wang, 2019)

1.4.5.3 Humpback Whales

Humpback whales migrate annually along the eastern coast of Australia heading north to tropical calving grounds from June to August, and south to Southern Ocean feeding areas from September to November (Figure 1-29). While the main migration route of this species is along the east coast of Australia along the continental shelf to the east of Bass Strait, some animals migrate through Bass Strait. Humpback whales do not feed, breed, or rest in Bass Strait and the Victorian coastal waters are not a key location for this whale species (Bannister J. L., 1996).

Most feeding grounds are south of Australian waters (TSSC, 2015b). A BIA for migration has been identified along the east coast of Australia (Figure 1-30) which is overlapped by the EMBA. Humpback whales in the southern Hemisphere primarily feed on Antarctic krill (*Euphausia superba*). While most feeding grounds are 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 NSW, and east coast of Tasmania (TSSC, 2015b).

In late February 2022, the humpback whale was removed from the vulnerable category and now holds no threatened status under the EPBC Act. The DAWE listing advice (DAWE, 2022) states that humpback whales have been recovering strongly for the past five decades, since their severe decline due to commercial whaling which ceased in 1963. However, they remain a MNES under the EPBC Act as a listed migratory species, and the species remains listed as a cetacean, where it is an offence to kill, injure, take, trade, keep, move, or interfere with a cetacean (DAWE, 2022).

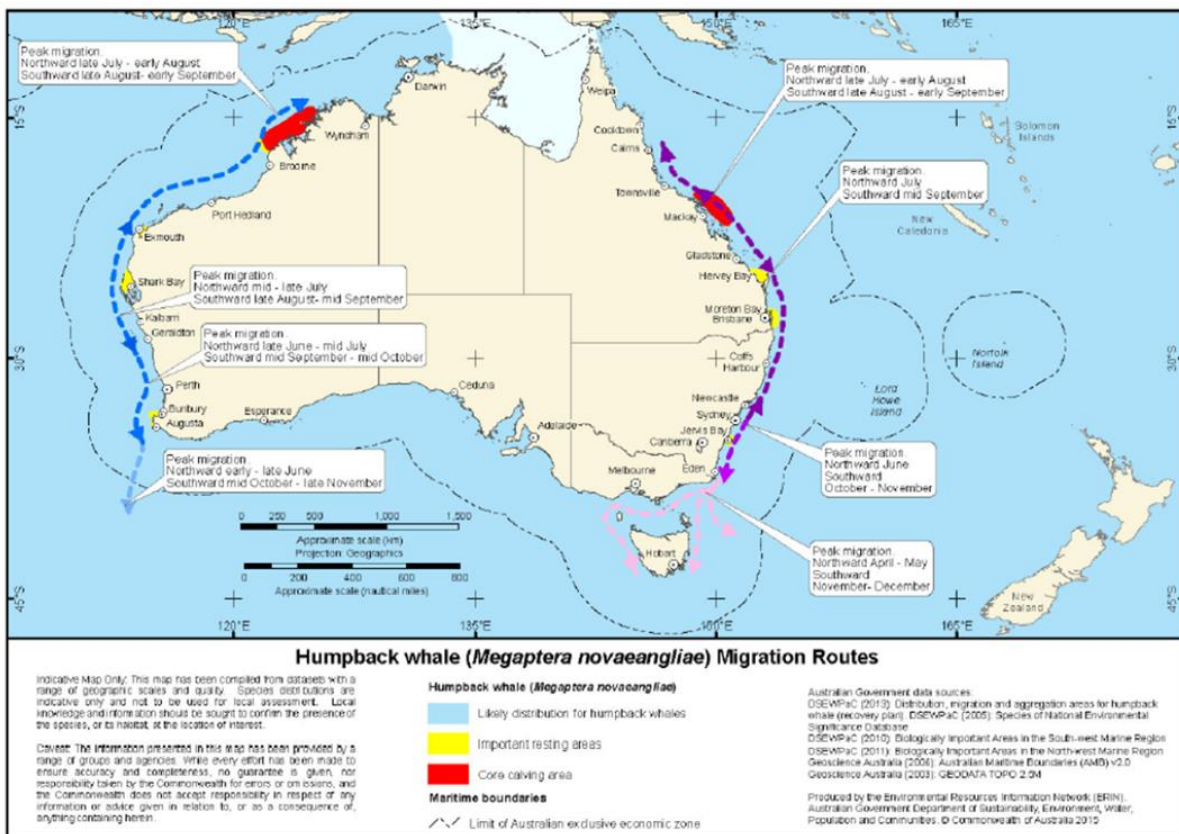
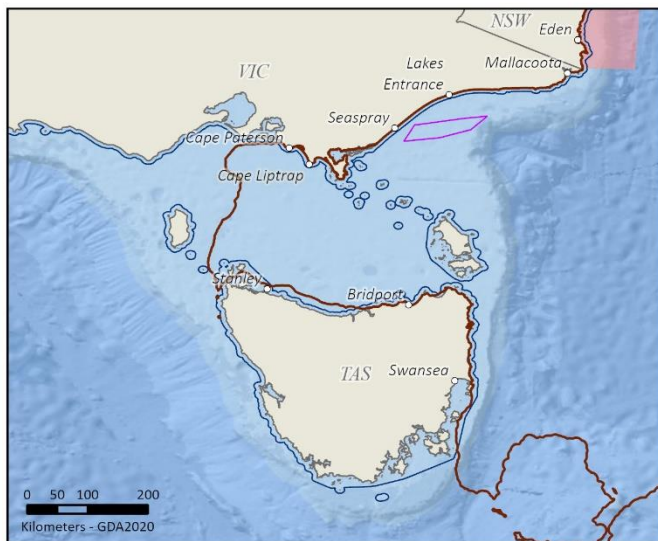
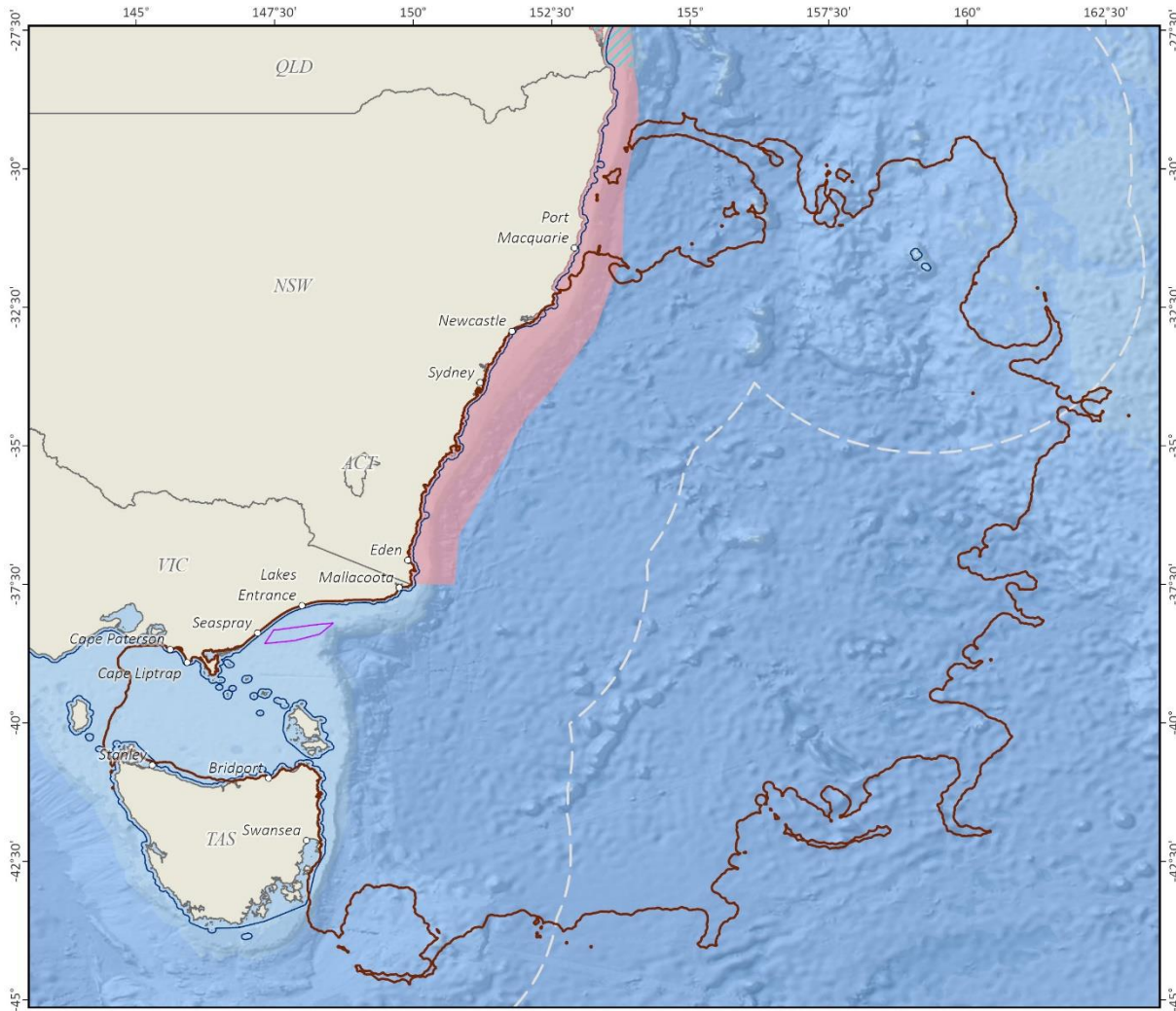


Figure 1-29 Migration routes for Humpback Whales around Australia (TSSC, 2015)



- Area of described environment (ADE)
- Spill EMBA
- 3 nm Coastal waters
- Commonwealth waters
- Humpback Whale BIA**
- Migration
- Resting

The environment that may be affected (EMBA) illustrated in this map represents the combined modelling results of 100 individual hydrocarbon spill simulations from a loss of well containment (LoWC) at Whiptail-1 (using West Kingfish crude as the analogue) and 100 individual hydrocarbon spill simulations from a LoWC at Mulloway-1 (using Hallbut crude as the analogue). The Whiptail-1 spill simulates the release of 61,544 m³ and the Mulloway-1 spill simulates the release of 22,747 m³, both over 98 days, using annualised meteorological conditions. Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill could occur at any time. The EMBA is not representative of a single spill; an individual spill would affect a significantly smaller area. The modelled EMBA is based on the lowest reportable hydrocarbon thresholds.

ESSO BASS STRAIT OPERATIONS
JUR P&A - Mammal BIA

0 50 100 200 300 400 km

Date: 9/07/2024
File: P156_BIA_Mammals_Humpback GDA2020

Figure 1-30 Humpback whale BIAs intersected by the EMBA

1.4.5.4 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 (DCCEEW, 2023e). Areas of coastal upwelling events appear to be an important component regulating Pygmy Right Whale distribution. Pygmy right whales (*Caperea truncates*) have primarily been recorded in areas associated with upwellings and with high zooplankton abundance, which constitute their main prey. 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 (DCCEEW, 2023e).

1.4.5.5 Sperm Whale

Sperm whales (*Physeter macrocephalus*) are the largest of the toothed whales and are generally found in pods of up to 50 individuals (DCCEEW, 2023e). Sperm whales have a global distribution. They generally inhabit deeper oceanic waters with a water depth of 600 m or more and are uncommon in waters less than 300 m (DCCEEW, 2023e). The PMST indicates that the species may occur within the EMBA. No BIAs for the species are recorded in the EMBA.

1.4.5.6 Antarctic Minke Whale

The Antarctic minke whale is more robust than the other large baleen whales. The maximum length of Antarctic minke whales appears to be around 9.8 m. Antarctic minke whales are not gregarious and tend to swim alone or in pairs, although large feeding groups of up to 400 individuals may form in the higher latitudes (DCCEEW, 2023e). Minke whales are known to be curious, often approaching boats from a distance.

Antarctic minke whales have been recorded in all Australian states but not in the Northern Territory. The paucity of records obscures the determination of the range of Antarctic minke whales along the Australian coast, although they are known to occur north to 21° S off the east coast. The distribution up the west coast of Australia is currently unknown. The current extent of occurrence for Antarctic minke whales is estimated to be greater than 20,000 km² (based on the Australian Economic Exclusion Zone) (DCCEEW, 2023e).

1.4.5.7 Bryde's Whale

The Bryde's whale is restricted to tropical and temperate waters and has been recorded off all Australian states with exception of the NT (Bannister J. L., 1996). Bryde's whales can be found in both oceanic (500 to 1,000 m isobath) and inshore waters (<200 m isobath) (DCCEEW, 2023e). Population estimates are not available for Bryde's whales, globally or in Australia, and no migration patterns have been documented in Australian waters (DCCEEW, 2023e). Bryde's whale is considered to be a fairly opportunistic feeder and it appears that the coastal and offshore forms may be distinguished by their prey preferences, with the smaller coastal form feeding on schooling fishes, such as pilchard, anchovy, sardine, mackerel, herring and others. In contrast, the larger offshore form appears to feed on small crustaceans, such as euphausiids, copepods, pelagic red crabs and cephalopods.

1.4.5.8 Sei Whale

Sei whales have been infrequently recorded in Australian waters; however occasional sightings have been recorded off Tasmania, NSW, Queensland and within the GAB (DCCEEW, 2023e). Sei whales typically feed between the Antarctic and Subtropical convergences, and their diet is planktonic crustacea, in particular copepods and amphipods. However, they 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 (DCCEEW, 2023e).

1.4.5.9 Fin Whale

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) (DCCEEW, 2023e). Fin Whales frequently lunge or skim feed, at or near the surface, feeding on planktonic crustacea, some fish and cephalopods (DCCEEW, 2023e). 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 (DCCEEW, 2023e). Fin whales have also been detected acoustically south of Portland, Victoria (Erbe, 2016).

Table 1-3 lists the relevant threats (as identified by relevant management plans/ listing advice/conservation advice) to threatened whale species that may occur within the EMBA.

Table 1-3 Key threats to threatened whale species relevant to the activity

Common name	Conservation advice or management plan	Key threats (relevant to the activity)
Sei Whale	Approved Conservation Advice for <i>Balaenoptera borealis</i> (Sei Whale)	Anthropogenic noise and acoustic disturbance Habitat degradation including pollution Pollution (persistent toxic pollutants) Vessel strike
Blue Whale	Conservation Management Plan for the Blue Whale, 2015-2025	Noise interference Habitat modification from marine debris or chemical discharge Vessel strike
Fin Whale	Approved Conservation Advice for <i>Balaenoptera physalus</i> (Fin Whale)	Anthropogenic noise and acoustic disturbance Pollution (persistent toxic pollutants) Vessel strike
Southern Right Whale	National Recovery Plan of the Southern Right Whale (<i>Eubalaena australis</i>)	Entanglement Vessel strike Noise Interference Habitat modification
Humpback Whale	Approved Listing Advice for <i>Megaptera novaeangliae</i> (Humpback Whale)	Noise interference Vessel disturbance and strike Habitat degradation

1.4.5.10 Killer Whale

The killer whale (the largest member of the dolphin family) is thought to be the most cosmopolitan of all cetaceans and appear to be more common in cold, deep waters, though they have often been observed along the continental slope and shelf particularly near seal colonies (Bannister J. L., 1996). The killer whale is widely distributed from polar to equatorial regions and has been recorded in all Australian waters with concentrations around Tasmania. The only recognised key locality in Australia is Macquarie Island and Heard Island in the Southern Ocean (outside the EMBA) (Bannister J. L., 1996).

The habitat of killer whales includes oceanic, pelagic and neritic (relatively shallow waters over the continental shelf) regions, in both warm and cold waters (DCCEEW, 2023e). The breeding season is variable, and the species moves seasonally to areas of food supply (Bannister J. L., 1996) (Morrice M. , 2004).

1.4.5.11 Dusky Dolphin

The dusky dolphin is rare in Australian waters and is primarily found from approximately 55°S to 26°S, though sometimes further north associated with cold currents. They are considered to be primarily an inshore species but can also be oceanic when cold currents are present (Gill P. R., 2000).

Only 13 reports of the dusky dolphin have been made in Australia since 1828 (the very first described specimen of the species by French naturalists was from off the coast of Tasmania in 1826 and key locations are yet to be identified (Bannister J. L., 1996). The dusky dolphin occurs across southern Australia from WA to Tasmania and there are confirmed sightings near Kangaroo Island, SA, and off Tasmania. No key localities or critical habitats in Australian waters have been identified (Bannister J. L., 1996).

1.4.5.12 Indian Ocean Bottlenose Dolphin

The Indian Ocean bottlenose dolphin is distributed continuously around Australia (DCCEEW, 2023e). The Indian Ocean bottlenose dolphin occurs mainly in riverine and shallow coastal waters (on the shelf or around oceanic islands) (DSEWPC, 2012e). Known populations include Jervis Bay, Twofold Bay, and Phillip Bay (DSEWPC, 2012e)(all of which are within the EMBA). Calving peaks occur in spring and summer or spring and autumn (DCCEEW, 2023e). Gestation lasts approximately 12 months, so peak mating period coincides with peak calving period in each location (DCCEEW, 2023e). A reproduction BIA for the Indian Ocean bottlenose dolphin has been identified within NSW coastal waters (within the EMBA) as well as a foraging BIA within waters surrounding Newcastle (also within the EMBA) (Figure 1-31) (DoEE, 2015).

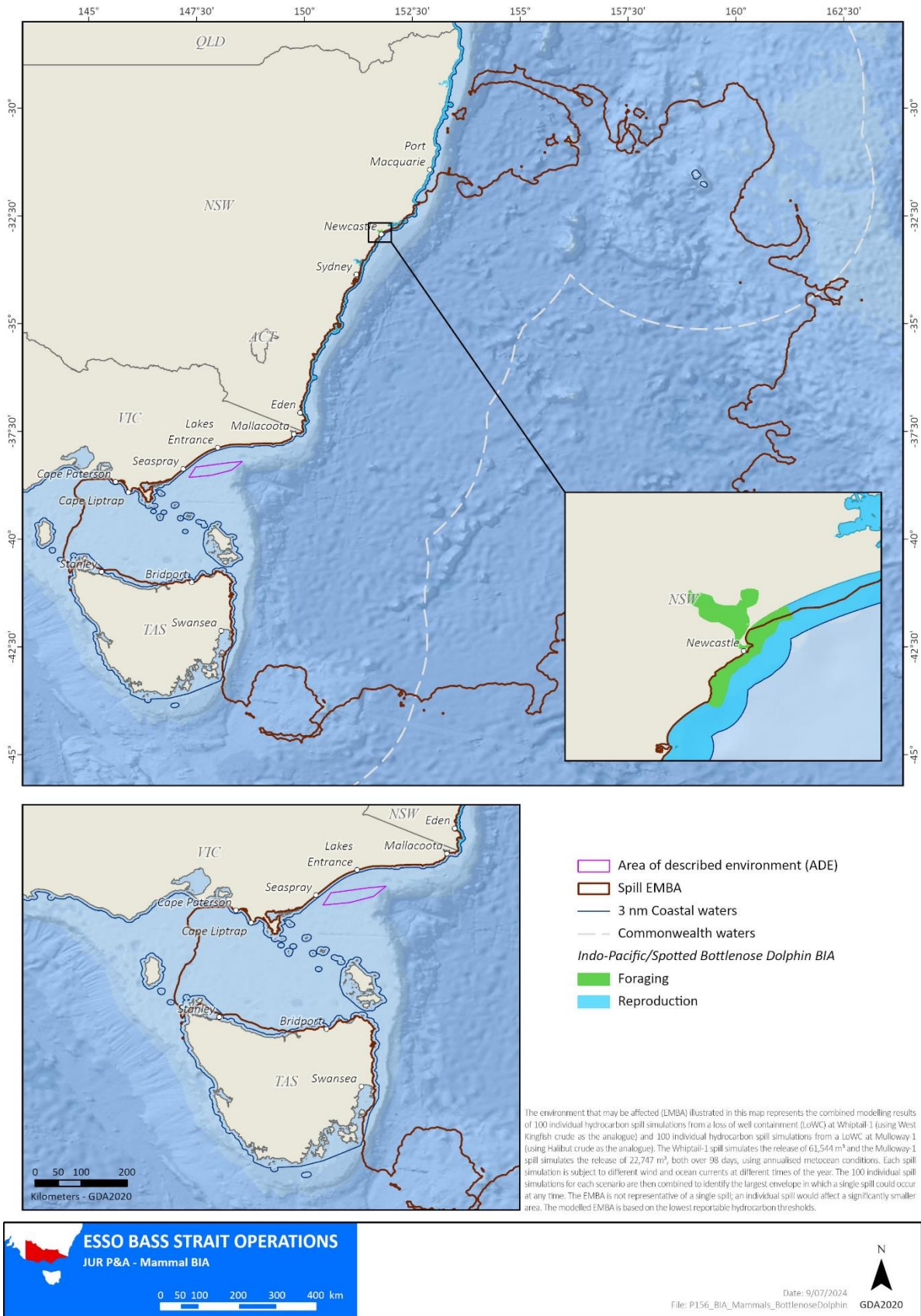


Figure 1-31 Indian Ocean bottlenose dolphin BIA's intersected by the EMBA

1.4.6 Sirenia

The dugong is the only species in the Family Dugongidae and one of four species in the Order Sirenia. It is most closely related to Steller's Sea Cow (*Hydrodamalis gigas*), which is extinct (Marsh, Penrose, Eros, & Hugues, 2002).

The dugong or its habitat may occur along the coast of NSW in the EMBA. Biologically important areas for the dugong are in the north-west of Australia and do not occur in the EMBA.

Dugongs occur in coastal and inland waters from Shark Bay in WA (25°S) across the northern coastline to Moreton Bay in Queensland (27°S) (Marsh H. T., 2011) (Marsh, Penrose, Eros, & Hugues, 2002). The winter range includes about 24,000 km of Australia's coast, which represents about 19% of the global extent of occurrence along coastline habitats (Marsh H. T., 2011). Stranded dugongs have been recorded as far south as ~36.5°S on the east coast, with occasional sightings south to 32–33.5°S (Newcastle region) in summer. In NSW the dugongs were sighted in coastal and estuarine waters around Wallis Lake, Port Stephens, Lake Macquarie and Brisbane Water in the summer of 2002/2003 (Allen, 2004). These areas are associated with some of the largest seagrass beds in NSW, some of which contain the *Halophila* seagrass species. The presence of dugongs in these areas at this time coincided with warm water temperatures (>18°C).

1.4.7 Pinnipeds

Two species of pinnipeds were detected by the PMST as potentially occurring in the EMBA. Neither of which are threatened or migratory. Both are described below.

1.4.7.1 Australian Fur Seal

Australian fur seals are endemic to south-eastern Australian waters and have a relatively restricted distribution around the rocky islands of Bass Strait (Figure 1-32). It is estimated that there are 60,000 Australian fur-seals in Bass Strait and the waters around Tasmania. The species has been recorded in the waters off SA, Victoria, Tasmania, and NSW and are the only species of seal known to breed on Victorian and Tasmanian islands in Bass Strait (Kirkwood, Warneke, & J.P., 2009).

There are 10 established breeding colonies of the Australian fur seal that are restricted to islands in the Bass Strait; six occurring off the coast of Victoria and four off the coast of Tasmania (Kirkwood, Warneke, & J.P., 2009). The largest of the established colonies occur at Lady Julia Percy Island (26% of the breeding population and 267 km west of the EMBA) and at Seal Rocks adjacent Phillip Island (25% of the breeding population and 9 km north of the EMBA), in Victoria. Both areas are not located within the EMBA.

Other Australian fur seal breeding colonies in Bass Strait and within the EMBA include (Figure 1-32):

- Rag Island (1,000 adults and 270 pups in 2007);
- Kanowna Island (15,000 adults and 3,000 pups);
- The Skerries (11,500 adults and 3,000 pups in 2002); and
- Judgment Rock in the Kent Island Group (~2,500 pups per year) (Kirkwood, Warneke, & J.P., 2009) (Shaughnessy, 1999) (OSRA, 2015).

(Barton, 2012), (Carlyon, 2011) and (OSRA, 2015) list the haul-out sites known in Bass Strait all of which are within the EMBA (Figure 1-32):

- Beware Reef (a haul-out site where the seals are present most of year;
- Gabo Island (30-50 individuals); and
- The Hogan Island group (~300 individuals).

Australian fur seals have a relatively restricted distribution around the islands of Bass Strait where it is the most common seal (Kirkwood R. G., 2005). Adult tagged seals have shown travel paths from Flinders Island to King Island presumably passing through CBS. Their preferred habitat, especially for breeding, is a rocky island with boulder or pebble beaches and gradually sloping rocky ledges.

During the summer months Australian fur seals are observed repeatedly travelling between northern Bass Strait islands and southern Tasmania waters following the Tasmanian east coast. Lactating female fur seals and some territorial males are restricted to foraging ranges within Bass Strait waters. Lactating female Australian fur-seals forage primarily within the shallow continental shelf of Bass Strait.

Australian fur seals forage on benthos at depths of between 60 m and 80 m (Hume F., 2004.) (Kirkwood A. J., 2007) (Robinson S., 2008) generally within 100 km to 200 km of the breeding colony for up to five days at a time (Hume F., 2004.). The lactation period lasts for between 10 and 11 months and some females may nurse pups for up to three years (Hindell, 2001).

Male Australian fur seals are bound to colonies during the breeding season from late October to late December. Outside the breeding season they forage up to several hundred km and are away for long periods even up to nine days (Kirkwood R. G., 2005). The sexes generally forage in the same environment (Kirkwood R. G., 2005) this suggests that males target different prey than females as observed in similar New Zealand fur seals where males prey on larger fish and seabird species compared to females. Considering the locations of known breeding and haul-out sites within the EMBA, it is likely the species will be encountered.

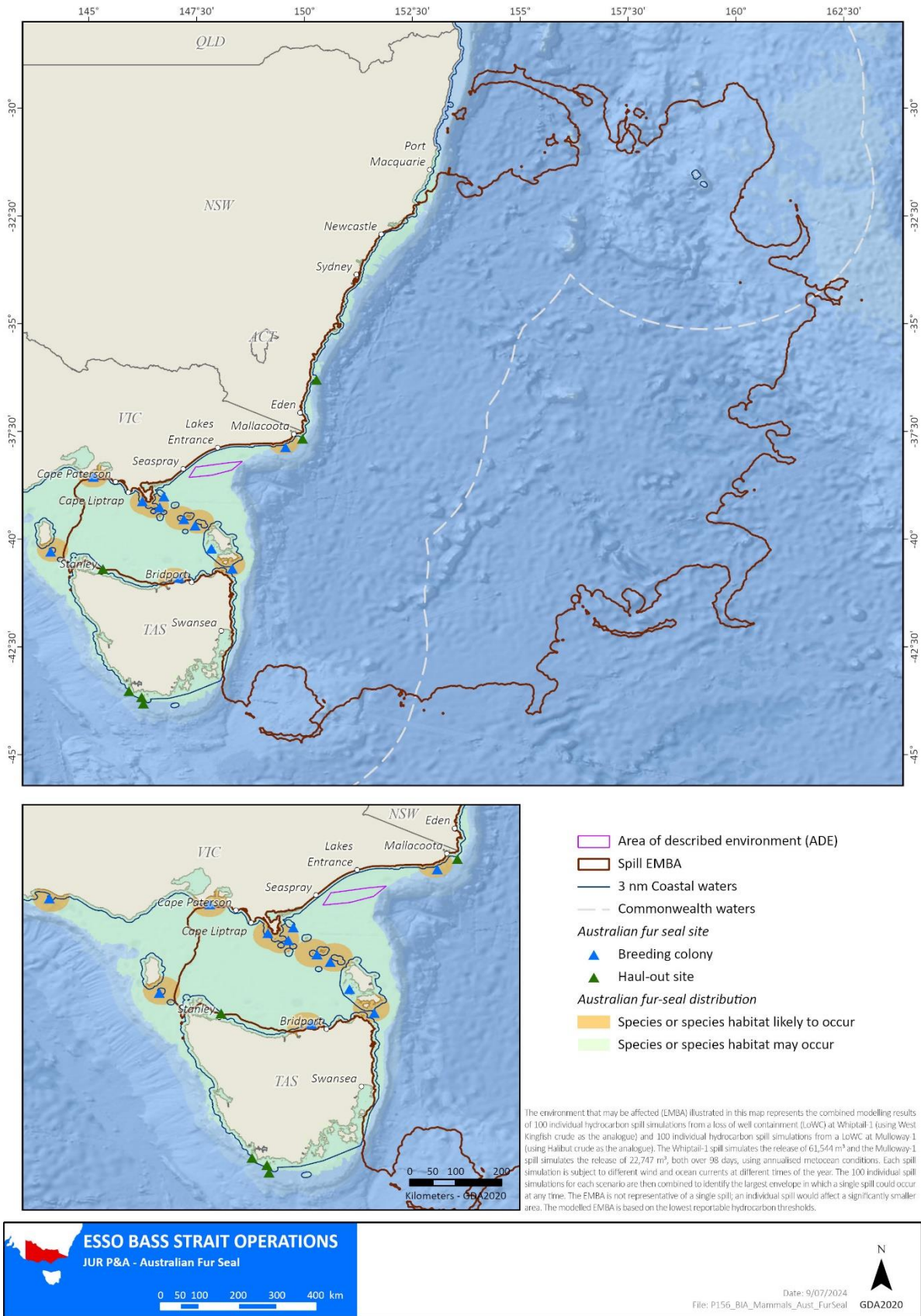


Figure 1-32 Australian fur-seal distribution, breeding colonies and haul-out sites within the EMBA

1.4.7.2 New Zealand Fur Seal

New Zealand fur seals (*A. fosteri*, also sometimes referred to as long nosed fur seals) are mostly found in central SA waters (Kangaroo Island to South Eyre Peninsula), with 77% of their population found here (outside the EMBA) (Shaughnessy, 1999).

There are 51 known breeding sites for New Zealand fur seals in Australia, with most of these outside of Victoria (47 in SA and WA) (Kirkwood A. J., 2007), with lower density breeding areas occurring in Victoria (Shaughnessy, 1999). Breeding locations in Victoria occur at Kanowna Island, off Wilson's Promontory and the Skerries (Kirkwood, Warneke, & J.P., 2009) both are located within the EMBA. Lady Julia Percy Island is also a known breeding site for the New Zealand fur-seal (267 km west of the EMBA) (Figure 1-33).

During the non-breeding season (November to January) the breeding sites are occupied by pups/young juveniles, whilst adult females alternate between the breeding sites and foraging at sea (Shaughnessy, 1999).

New Zealand fur seals feed on small pelagic fish, squid, and seabirds, including little penguins (Shaughnessy, 1999). Juvenile seals feed primarily in oceanic waters beyond the continental shelf, lactating females feed in mid-outer shelf waters (50-100 km from the colony) and adult males forage in deeper waters.

In 2005-2006, New Zealand fur seal pup production at the 40 known Australian breeding colonies was estimated at 17,600 pups, equivalent to approximately 35,000 breeding females (Chilvers, 2015). The population has been slow to recover from the previous intense sealing operations from 1798 to 1820, partially as the species are slow reproducers, producing one pup per year when they reach sexual maturity at four years. Up to 15% of pups die before they reach two months of age, primarily because of fishing net and other marine debris entanglements.

Haul-out sites in Bass Strait, as reported by (Barton, 2012) and (OSRA, 2015), are listed below (all of which are within the EMBA) (Figure 1-33):

- Beware Reef;
- Kanowna Island;
- The Hogan Islands Group; and
- West Moncoeur Island.

The species prefers the rocky parts of islands with jumbled terrain and boulders and prefers smoother igneous rocks to rough limestone. Breeding colonies in Bass Strait recorded by (Shaughnessy, 1999) and OSRA mapping are listed below (all of which are within the EMBA) (Figure 1-33):

- Rag Island (1,000 adults and 235 pups in 2006);
- Kanowna Island (10,700 adults and 2,700 pups);
- The Skerries (300 adults and 78 pups in 2002); and
- Judgment Rock in the Kent Island Group (~ 2,500 pups per year) (Kirkwood, Warneke, & J.P., 2009).

There is no BIAs for the New Zealand fur-seal in Bass Strait. Considering the locations of known breeding and haul out sites within the EMBA, it is likely the species will be encountered.

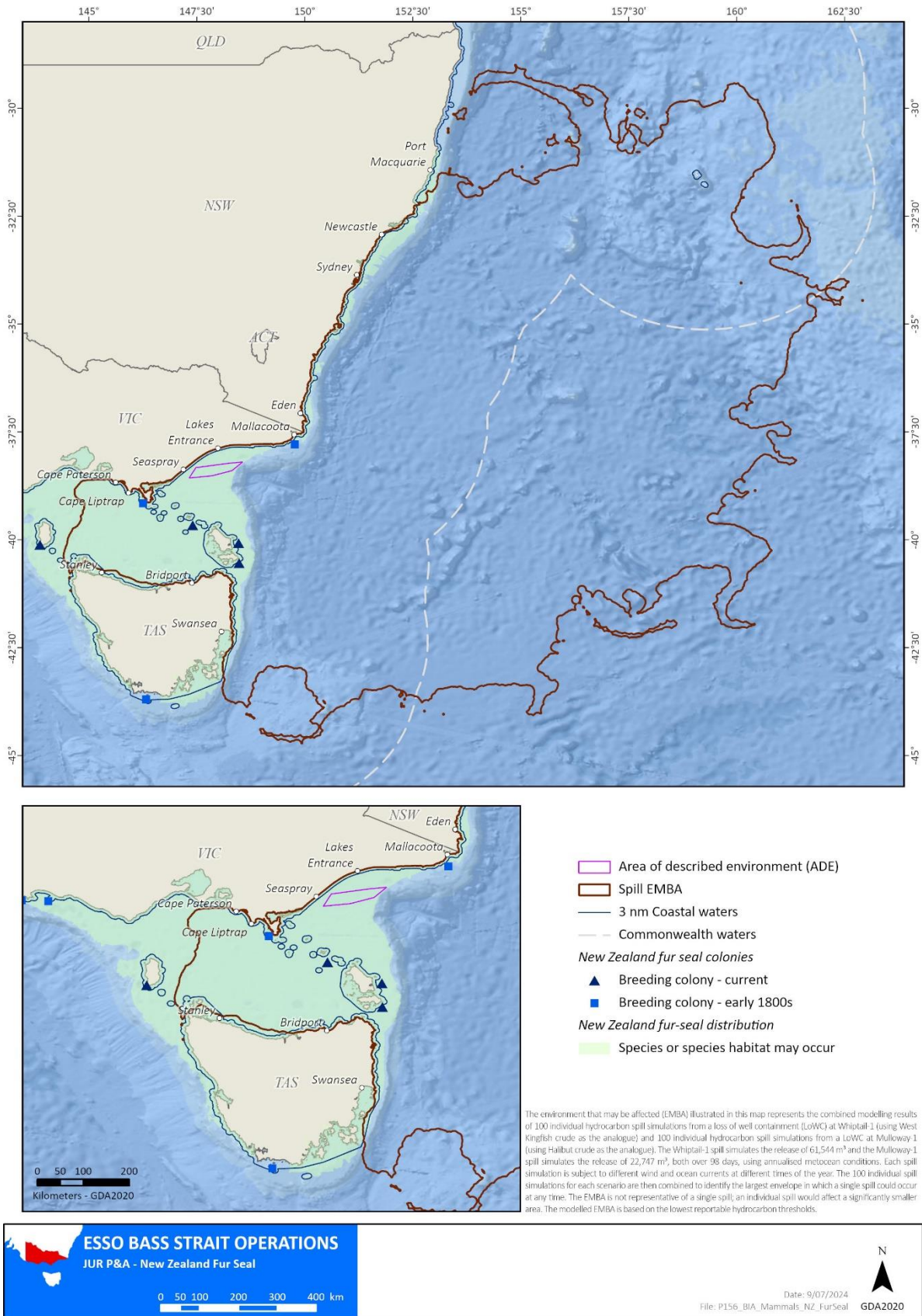


Figure 1-33 New Zealand fur seal distribution, breeding colonies and haul-out sites within the EMBA

1.4.8 Turtles

Adult marine turtles spend the majority of their lives in the ocean, typically only coming onshore to nest. Females can lay (on average) between two and six clutches per season: 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 two months (DoEE, 2017). 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 (DoEE, 2017). Flatback turtles also lack an oceanic phase and remain in the surface waters of the continental shelf.

There are five marine turtle species (or species habitat) that may occur within the EMBA. All of which are described below. Table 1-4 shows the key threats (as identified in the Recovery Plan for Marine Turtles in Australia, 2017-2027) relevant to the activity for threatened turtles that may occur within the EMBA.

Table 1-4 Key threats to threatened turtle species relevant to the activity.

Common name	Recovery Plan	Key threats (relevant to the activity)
Loggerhead Turtle	Recovery Plan for Marine Turtles in Australia, 2017-2027	Marine debris Chemical discharge Light pollution Habitat modification Vessel disturbance Noise interference
Green Turtle		
Leatherback Turtle		
Hawksbill Turtle		
Flatback Turtle		

1.4.8.1 Loggerhead turtle

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 WA (DCCEEW, 2023e). Loggerhead turtles are carnivorous, feeding primarily on benthic invertebrates. 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 (DCCEEW, 2023e). 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 (DCCEEW, 2023e). No nesting or internesting, critical habitat, or BIAs, have been identified for the loggerhead turtle within the EMBA.

1.4.8.2 Green turtle

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 (DCCEEW, 2023e). Within Australia, green turtles typically nest, forage and migrate across tropical northern Australia (DCCEEW, 2023e). 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. 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 (DCCEEW, 2023e). No nesting or internesting, critical habitat, or BIAs, have been identified for the green turtle within the EMBA.

1.4.8.3 Leatherback turtle

The leatherback turtle has the widest distribution of any marine turtle, occurring in tropical to sub-polar oceans (TSSC, 2008). In Australia, the leatherback turtle has been recorded foraging in all Australian states, but no large nesting populations have been recorded (TSSC, 2008). The leatherback turtle is a highly pelagic species, venturing close to shore mainly during the nesting season (DCCEEW, 2023e). Adults feed mainly on pelagic soft-bodied creatures such as jellyfish, tunicates, salps, squid (DCCEEW, 2023e). No nesting or internesting, critical habitat, or BIAs, have been identified for the leatherback turtle within the EMBA.

1.4.8.4 Hawksbill Turtle

The hawksbill turtle is found in tropical, subtropical, and temperate waters all around the world (DCCEEW, 2023e). hawksbill turtles are omnivorous, feeding on sponges, hydroids, cephalopods (octopus and squid), gastropods (marine snails), cnidarians (jellyfish), seagrass and algae (DCCEEW, 2023e). During their pelagic phase (while drifting on ocean currents), young hawksbill turtles will feed on plankton. 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 NSW originate (DCCEEW, 2023e). No nesting or interesting, critical habitat, or BIAs, have been identified for the hawksbill turtle within the EMBA.

1.4.8.5 Flatback Turtle

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 (DCCEEW, 2023e). All known nesting locations for this species are within Australia (DCCEEW, 2023e). Flatback turtles are primarily carnivorous, feeding on soft-bodied invertebrates; juveniles eat gastropod molluscs, squid, siphonophores. Limited data also indicate that cuttlefish, hydroids, soft corals, crinoids, molluscs and jellyfish may also form part of their diet (DCCEEW, 2023e). No nesting or interesting, critical habitat, or BIAs, have been identified for the flatback turtle within the EMBA.

1.4.9 Birds

Birds in the marine environment can include both seabirds and shorebirds.

Seabirds refers to those species of bird whose regular habitat and food sources are derived from the ocean (both coastal and pelagic); seabirds include such species as pelicans, gannets, cormorants, albatrosses, and petrels. Seabirds spend much of their lives at sea in search of prey only to return for a short time to breed and raise chicks. Most species tend to forage on their own, though large feeding flocks will gather at rich or passing food sources. Squid, fish, and krill are common sources of food.

Shorebirds (sometimes referred to as wading birds) refers to those species of bird commonly found along sandy or rocky shorelines, mudflats, and shallow waters; shorebirds include such species as plovers and sandpipers. Shorebirds spend most of their time (nesting, feeding, and breeding) on the shoreline and don't swim.

There are 109 seabird and shorebird species (or species habitat) that may occur within the EMBA; this includes species classified as threatened and migratory (See Table B-3 Appendix B and Appendix D for the full PMST report).

The coast and neighbouring islands within the EMBA provide feeding and nesting habitats for many coastal and migratory bird species.

Many of the birds listed in Table B-3 Appendix B are listed in the following international conventions that aim to protect the birds themselves and their habitat:

- Republic of Korea Migratory Birds Agreement 2006 (ROKAMBA);
- Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment 1986 (CAMBA);
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979;
- Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment 1974 (JAMBA); and
- Convention on Wetlands of International Important especially as Waterfowl Habitat 1971 ('Ramsar Convention')

1.4.9.1 Albatrosses & Petrels

The PMST report detected 16 albatross and 16 petrel species (see Table B-3 Appendix B) that have the potential to occur within the EMBA. BIAs for several Albatross and Petrel species are shown in Figure 1-34, Figure 1-35, Figure 1-36, Figure 1-37 and Figure 1-38.

Albatrosses and 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 less than 15 m deep). Both species are wide-ranging, opportunistic predators, individuals will forage singly and

will then aggregate in larger numbers where there is a rich food source. They prefer to feed during the day or at night (often by moonlight) (CoA, 2022).

Albatrosses and petrels have a diverse diet, depending on the availability of food, including cephalopods, crustaceans, cyclostomes, fish, and tunicates, although diet is not well known for several species. Both species have a tendency to follow fishing vessels. Competition for fishers discards and baited hooks can be intense with smaller birds subject to secondary attacks by other larger birds (CoA, 2022).

Albatross and petrel species occurring in Australia's jurisdiction predominantly breed on remote, offshore islands in the higher latitudes, apart from the Northern Royal Albatross (detected in the PMST) and Westland Petrel (not detected in the PMST) that breed on the South Island of New Zealand (CoA, 2022).

Albatrosses and petrels are extremely site faithful. The remote offshore islands (Table 1-5) should be regarded as habitat that is potentially critical to the survival of albatrosses and petrels in Australia.

Table 1-5 Albatross and petrel breeding site locations in Australia’s jurisdiction

Site	Species	Distance to the EMBA	Size (ha)
Albatross Island	Shy albatross	Within the EMBA	33
Mewstone	Shy albatross	144 km west	13
Pedra Branca	Shy albatross	97 km west	2.5
Macquarie Island	Black-browed albatross, grey-headed Albatross, grey Petrel, light-mantled albatross, wandering albatross, northern giant petrel, southern giant petrel	1,262km southeast	13,000
Bishop and Clerk Islets	Black-browed albatross	1,308km southeast	60
Heard Island	Black-browed albatross, light-mantled albatross, southern giant petrel	5,336km southwest	36,800
McDonald Islands	Black-browed albatross, light-mantled albatross, southern giant petrel	5,336km southwest	360
Giganteus Island	Southern giant petrel	5,396km southwest	16
Hawker Island	Southern giant petrel	4,746km southwest	190
Frazier Islands	Southern giant petrel	3,353km southwest	60

Source: (CoA, 2022)

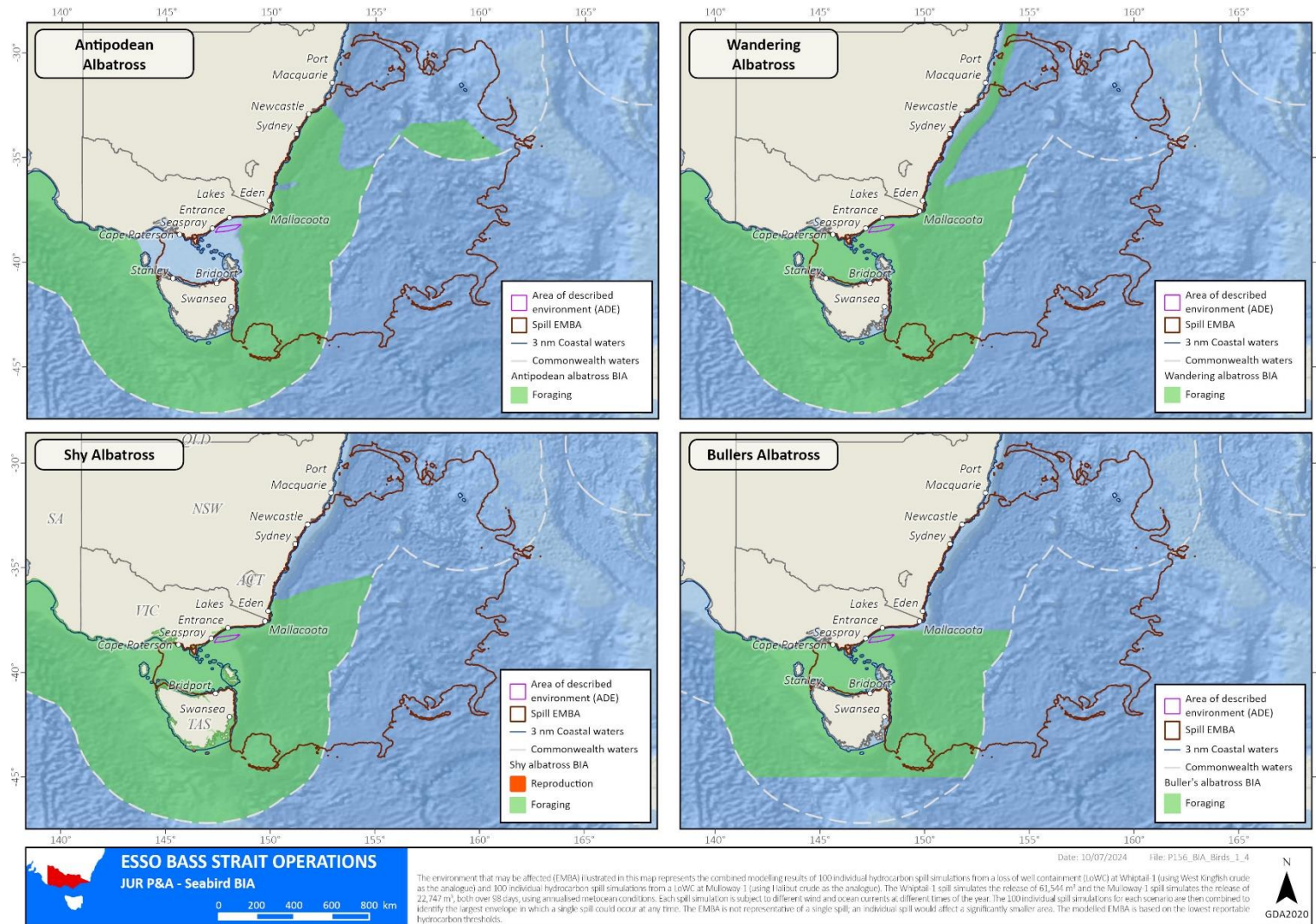


Figure 1-34 BIAs for the antipodean, wandering, shy and bullers albatross intersected by the EMBA

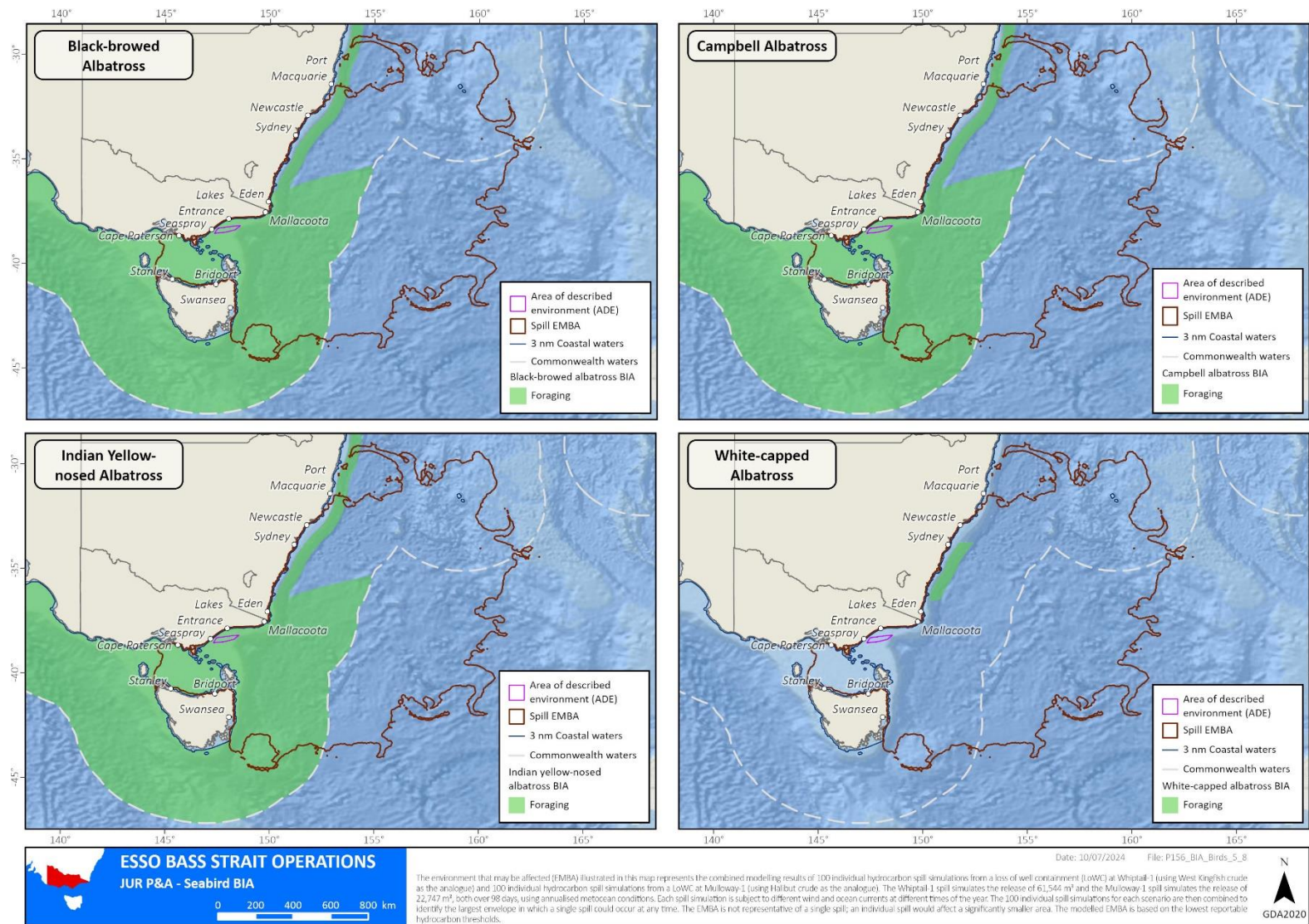


Figure 1-35 BIAs for the black-browed, campbell, Indian yellow-nosed and white-capped albatrosses intersected by the EMBA

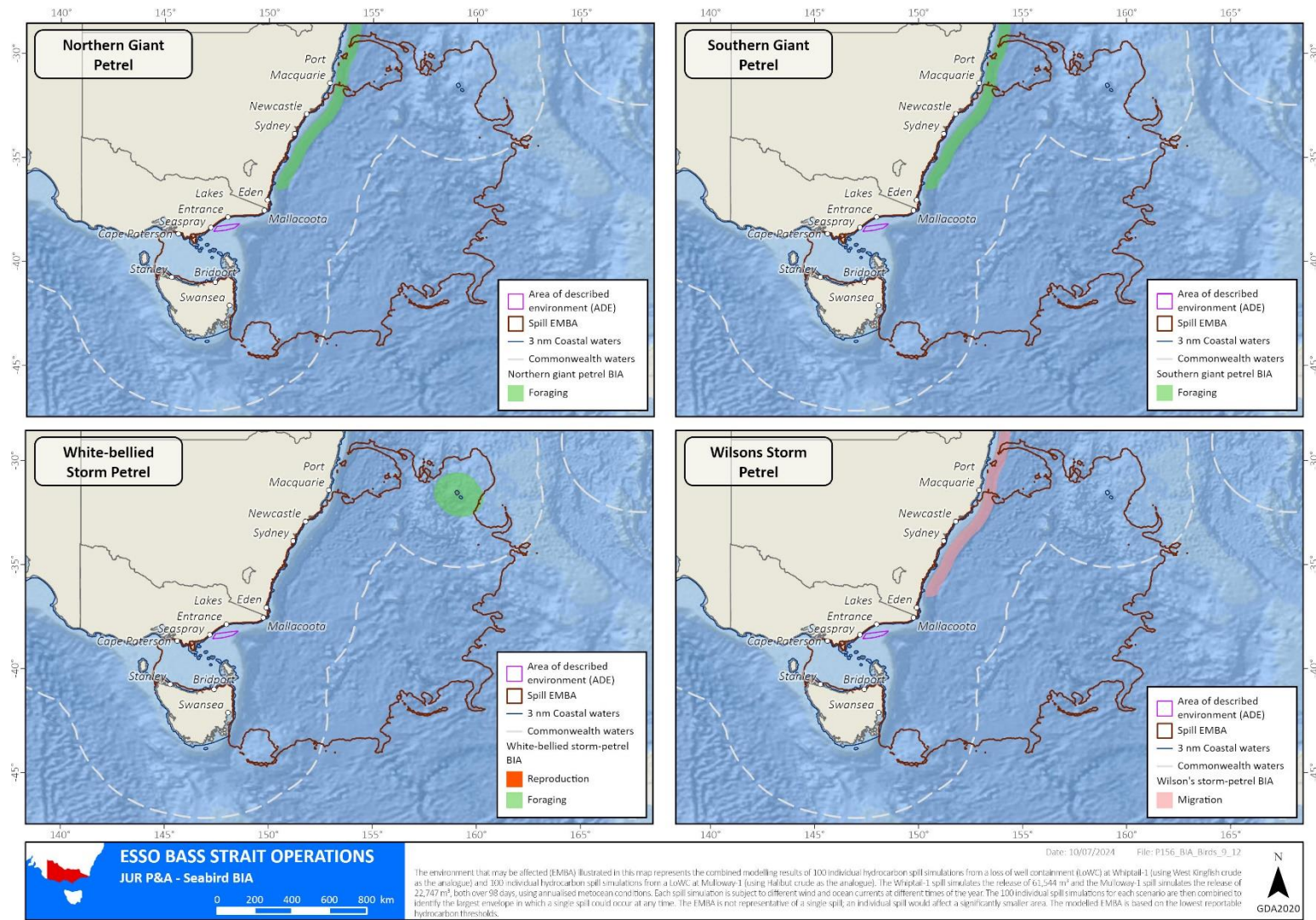


Figure 1-36 BIAs for the northern giant, southern giant, white-bellied storm and wilsons storm petrels intersected by the EMBA

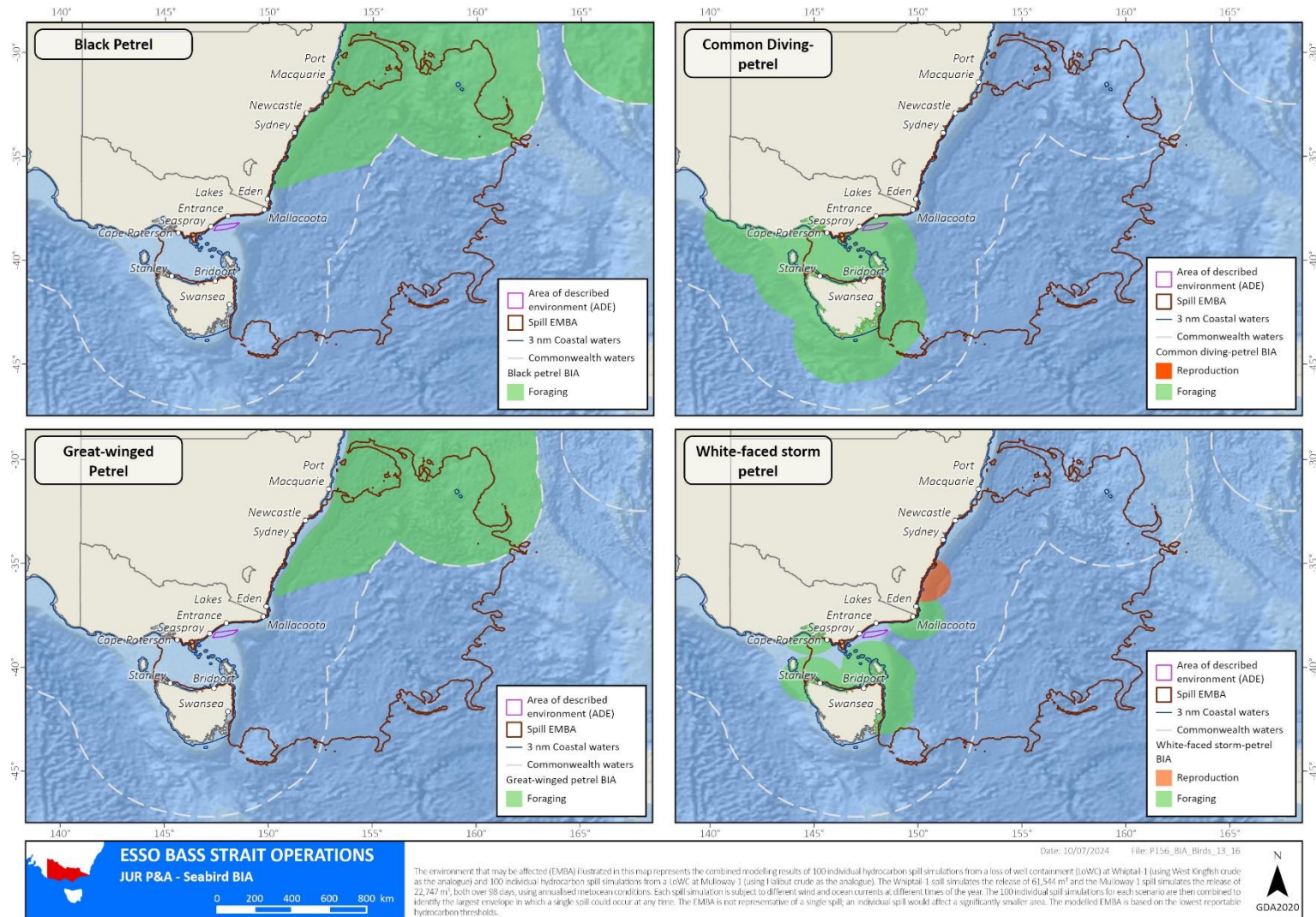


Figure 1-37 BIAs for the black, common diving, great winged and white-faced storm petrels intersected by the EMBA

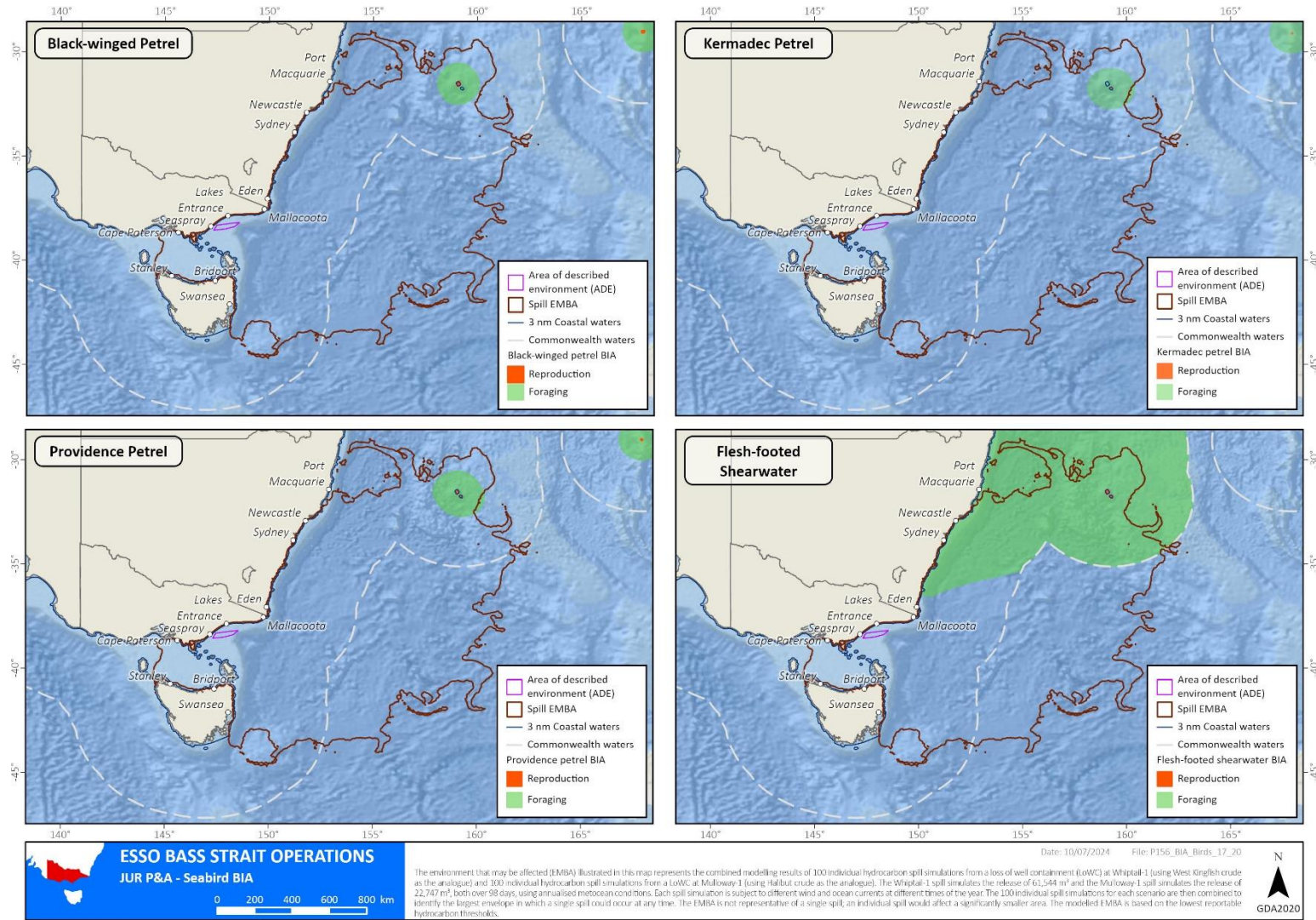


Figure 1-38 BIAs for the black-winged, kermadec and providence petrels and the flesh-footed shearwater intersected by the EMBA

1.4.9.2 Shearwaters

Six species of shearwaters were detected by the PMST. Shearwaters represent the most abundant seabird in Australia they are typically pelagic, except during breeding seasons where they are found on remote islands or coastal headlands. 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. Food is usually taken by pursuit-plunging, surface plunging or surface-seizing (DCCEEW, 2023e). Some shearwaters, such as the sooty and flesh-footed, are trans-equatorial migrants and are widely distributed across the Pacific Ocean.

Known breeding locations for the sooty shearwater and wedge-tailed shearwater include oceanic islands in NSW (such as Solitary Island, Cabbage Tree Island, Muttonbird Island, Bird Island) (Bird Island being the only one within the EMBA) (DCCEEW, 2023e). Breeding season in south-eastern Australia for shearwaters is typically over summer; late-August/early September to May. Shearwater nests are usually in burrows or rock crevices. Due to their expansive ranges, it is likely that shearwaters may overfly, forage, breed or rest in the EMBA. BIAs for five Shearwater species are shown in Figure 1-38 and Figure 1-39.

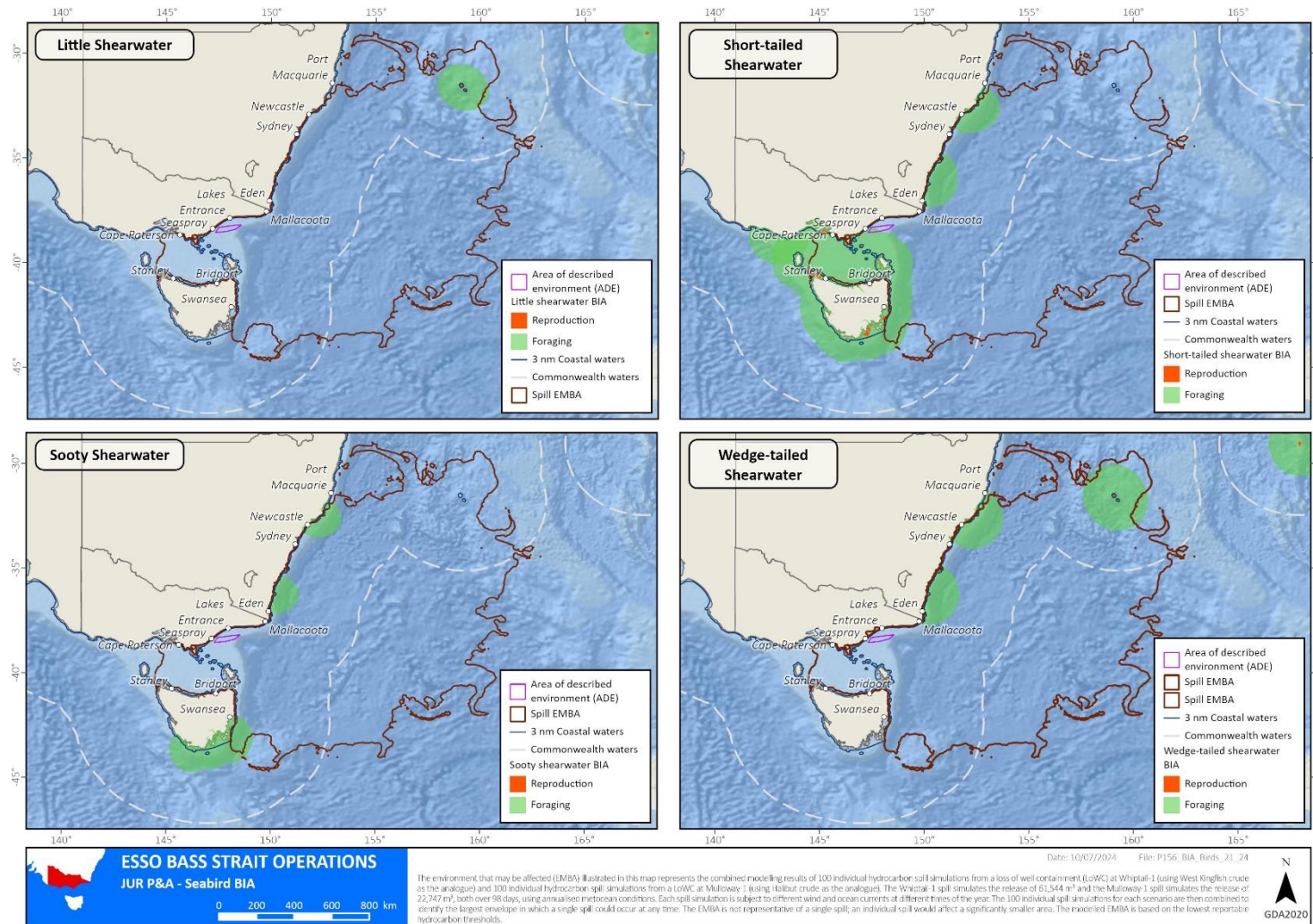


Figure 1-39 BIAs for the little, short-tailed, sooty and wedge-tailed shearwaters intersected by the EMBA

1.4.9.3 Other Seabirds

Other seabirds listed in the PMST that may occur within EMBA are described here:

- The fork-tailed swift (*Apus pacificus*) is a medium-sized bird has a large global distribution and population, occurring throughout much of Australia. In Victoria, it is widespread but sparsely scattered, occurring over cliffs, beaches and sometimes well out to sea (BirdlifeAustralia, 2023). This species is almost exclusively aerial, feeding on insects in flight. As a migratory species, it arrives in Australia from September to October, leaving southern Australia from mid-April (BirdlifeAustralia, 2023). As a common species, the fork-tailed swift may flyover the EMBA from September to April.
- The great skua (*Catharacta skua*) is a large migratory seabird distributed throughout all southern Australian waters (though not listed as migratory under the EPBC Act). This species breeds in summer on nested elevated grasslands or sheltered rocky areas on sub-Antarctic islands, with most adult birds leaving their colonies in winter. Great skuas feed on other seabirds, fish, molluscs, and crustaceans, and may be present in EMBA (though scarce) during winter (Flegg, 2002).
- The fairy prion (*Pachyptila tutur*) is the most common prion found in southeast Australia. The species is found mainly offshore but may move inshore during stormy weather. Their diet consists of primarily krill but may include some fish and squid. Surface-seizing and dipping are their primary feeding methods, but they can also surface-plunge and use pattering (BirdlifeInternational, 2023).
- The southern fairy prion (*Pachyptila turtur subantarctica*) is mainly found offshore. The species diet is comprised mostly of crustaceans (especially krill), but occasionally includes some fish and squid. It feeds mainly by surface-seizing and dipping but can also catch prey by surface-plunging or pattering Birdlife (Australia, 2023). In Australia, it is known to breed only on Macquarie Island and on the nearby Bishop and Clerk islands (BirdlifeAustralia, 2023).
- The white-bellied sea eagle (*Haliaeetus leucogaster*) is distributed along the coastline in coastal lowlands with breeding sites from Queensland to Victoria in coastal habitats and terrestrial wetlands in temperate regions. The breeding season is from June to January with nests built in tall trees, bushes, cliffs, or rock outcrops. Breeding pairs are generally widely dispersed (BirdlifeAustralia, 2023). The species forages over open water (coastal and terrestrial) and feeds on fish, birds, reptiles, mammals, and crustaceans and normally launches into a glide to snatch its prey, usually with one foot, from the ground or water surface. The species is widespread and makes long-distance movements (BirdlifeAustralia, 2023). This species may be present along the adjacent coastline of the EMBA.
- The osprey (*Pandion haliaetus*) is a common, medium-sized raptor that is present around the entire Australian coastline, with the breeding range restricted to the north coast of Australia (including many offshore islands) and an isolated breeding population in SA (BirdlifeAustralia, 2023). Breeding occurs from April to February. Ospreys occur mostly in coastal areas but occasionally travel inland along waterways, where they feed on fish, molluscs, crustaceans, reptiles, birds, and mammals. They are mostly resident or sedentary around breeding territories, and forage more widely and make intermittent visits to their breeding grounds in the non-breeding season (BirdlifeAustralia, 2023). Due to their broad habitat, osprey may be present in the coastal areas of the EMBA.
- Terns - several EPBC Act-listed tern species may occur within the EMBA. Terns are slender, lightly built birds with long, forked tails, narrow wings, long bills, and relatively short legs. Many of the tern species present along the southern Australian coastline are widespread and occupy beach, wetland, and grassland 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. Fairy terns feed by plunge diving on small baitfish in coastal waters, usually close to land (BirdlifeAustralia, 2023). The total number of Australian fairy terns is estimated to be 5,000 mature individuals that utilise offshore, estuarine, lacustrine, wetland, beach, and spit habitats (DSEWPC, 2011). The species nests above the high-water mark in clear view of the water and on sites where the substrate is sandy and the vegetation low and sparse (DSEWPC, 2011). Fairy terns are threatened by predation from introduced mammals, disturbance by humans, dogs, and vehicles (DSEWPC, 2011). BIAs for the crested tern, sooty tern, whit tern and white-fronted tern intercepted by the EMBA can be seen in Figure 1-40.
- Noddies – three EPBC Act-listed noddy species (common, black, and grey) may occur within the EMBA. Noddies are part of the same family as terns. The common noddy is a tropical seabird with a worldwide distribution, occurring around isolated, bare, or vegetated, inshore, or oceanic islands or coral reefs with

rocky cliffs or offshore stacks and coral or sand beaches (CoA, 2020). Their diet consists predominantly of small fish as well as squid, pelagic molluscs, medusae and insects. The black noddy also has a worldwide distribution inhabiting tropical and subtropical island. They feed by hover-dipping and contact-dipping. The grey noddy breeds on Lord Howe (within the EMBA) and Norfolk Islands and on Kermadec Island, New Zealand. The grey noddy eats very small fish (average length 17 mm), squid, crustaceans (CoA, 2020). BIAs for the three species of noddy intercepted by the EMBA can be seen in Figure 1-41.

- The black-faced cormorant is endemic to southern Australia (CoA, 2020); and favours rocky coasts. The species feeds in coastal waters on a variety of fish, typically catching prey by pursuit-diving. There are 40 significant breeding sites (defined as more than 10 breeding pairs) known for the species in southern Australia. Breeding usually occurs on rocky islands, but also on stacks, slopes, and sea cliffs in colonies of up to 2,500 individuals (CoA, 2020). Breeding and foraging BIAs for the black-faced cormorant that intersect with the EMBA can be seen in Figure 1-42.
- The masked booby is a large, EPBC Act-listed marine and migratory species that has a breeding population on Lord Howe Island (within the EMBA) (Mutton Bird Point, King Point, Roach Island, South Island, Sugarloaf Island, Mutton Bird Island, Gower Island, Sail Rocks and Ball's Pyramid) that is the most southerly known breeding colony in the world (DCCEEW, 2023e). The masked Booby nests in small colonies, laying on sandy beaches and feeds by plunge diving on the ocean (DCCEEW, 2023e). Breeding and foraging BIAs for the masked booby that intersect with the EMBA can be seen in Figure 1-42.
- The red-tailed tropic bird is a medium sized (45-55cm) seabird and is EPBC Act-listed marine and migratory. The species exists in tropical Pacific and Indian oceans (DCCEEW, 2023e). It nests on cliffs by the water's edge, and less so inland on smaller islands and has been identified as a conservation value in the Temperate East Marine Region. The red-tailed tropicbird is mostly a plunge-diver, diving anywhere from an above-water height 6 to 50 m to a depth of about 4.5 m (AOLA, 2019). No specific conservation plans exist for this species. Breeding and foraging BIAs for the red-tailed tropic bird that intersect with the EMBA can be seen in Figure 1-42.

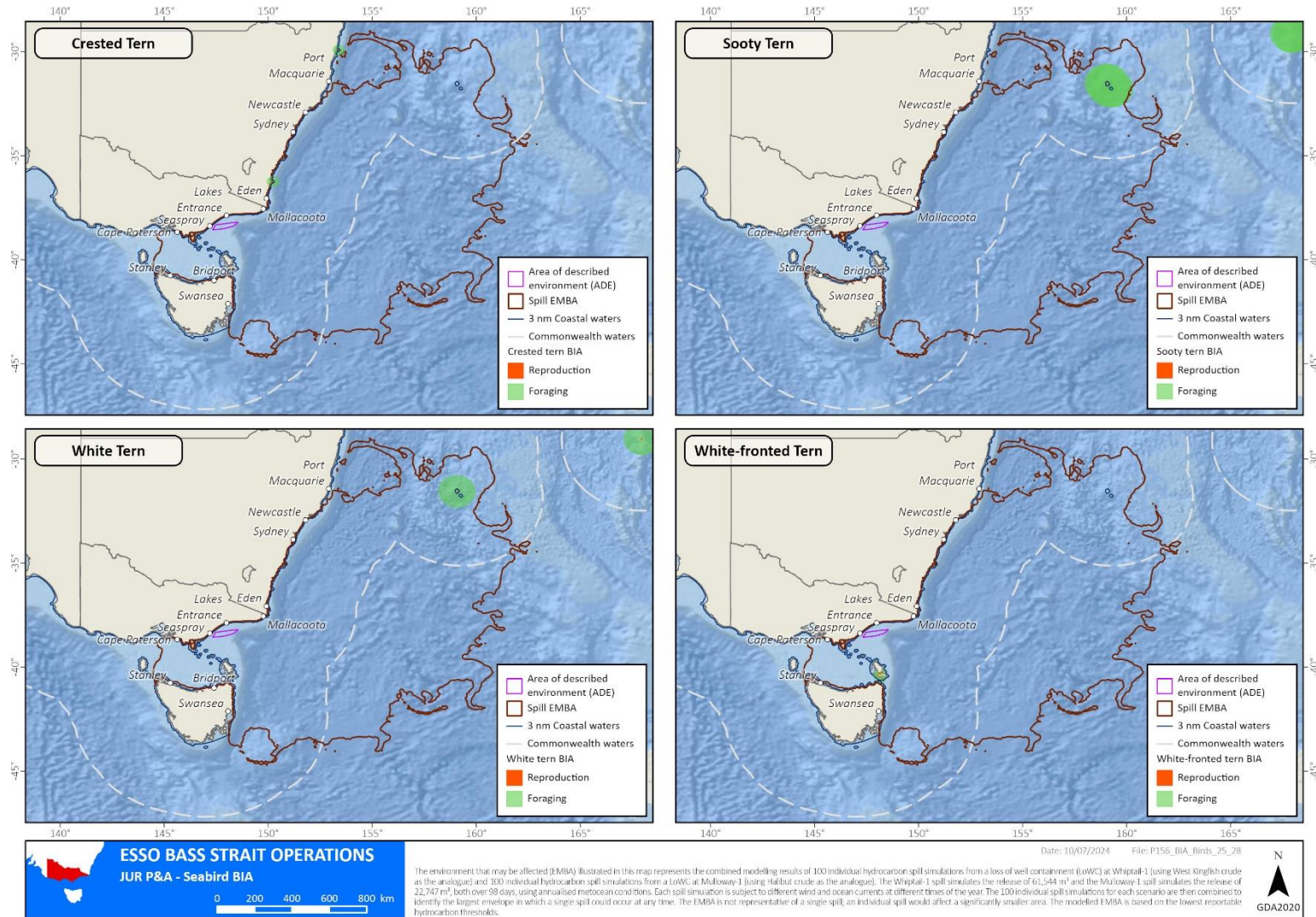


Figure 1-40 BIAs for the crested, sooty, white and white-fronted terns intersected by the EMBA

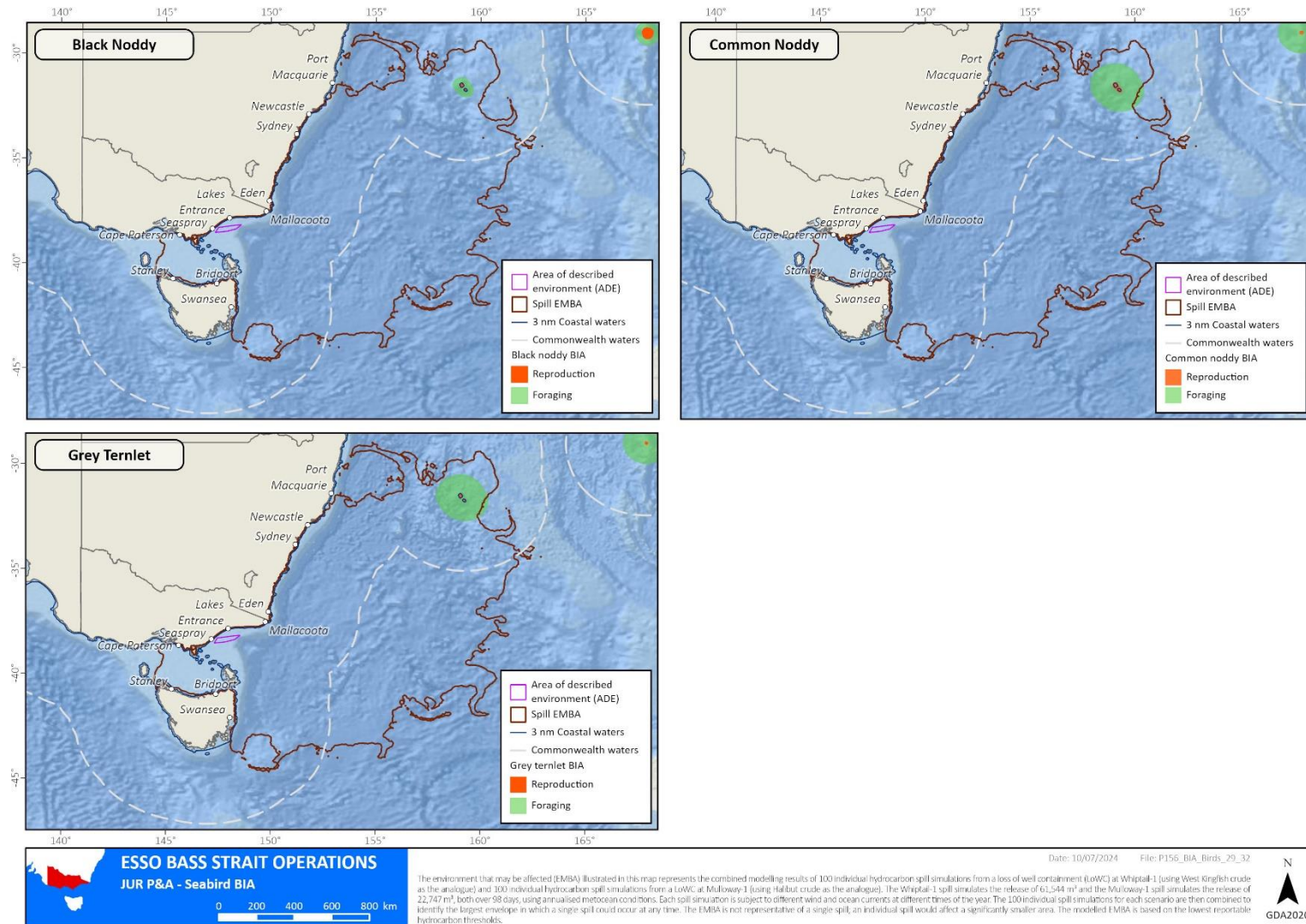


Figure 1-41 BIAs for the black noddy, common noddy and grey noddy intersected by the EMBA

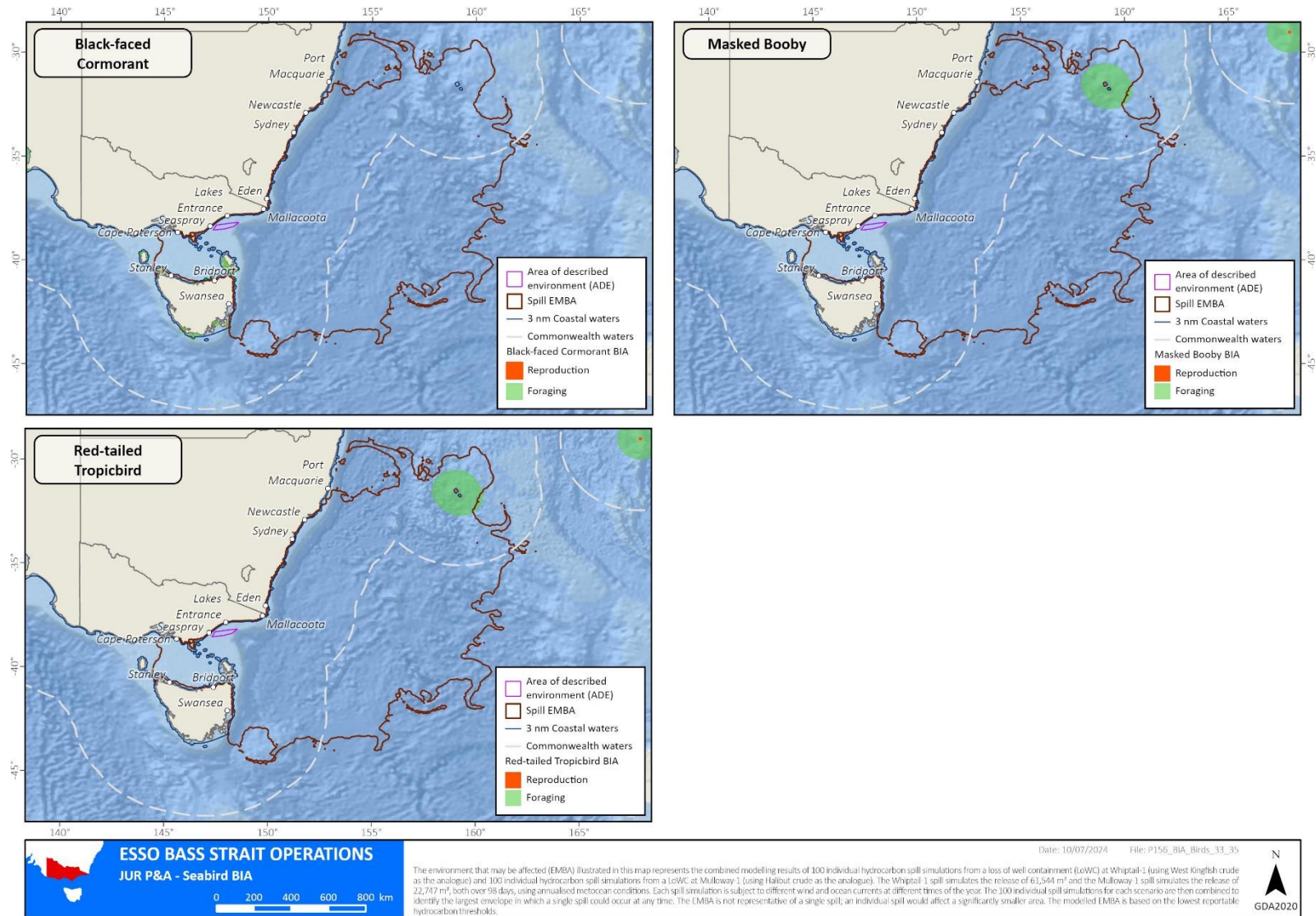


Figure 1-42 BIAs for the black-faced cormorant, masked booby and red-tailed tropicbird intersected by the EMBA

1.4.9.4 Little Penguin

The little penguin (*Eudyptula minor*) is a seabird that does not fly and is the smallest of the 17 penguin species in the world. Little penguins occur from WA (Carnac Island) to NSW (Broughton Island) and Tasmania. Their distribution is not continuous, with sections of the southern coast of Australia lacking breeding colonies (CoA, 2020). They are permanent residents of the coastal and offshore islands of parts of the Victorian and Tasmanian coast and Bass Strait islands, with the South-east Marine Region representing about 60% of the species known breeding population (CoA, 2015).

Individuals exhibit strong site fidelity, returning to the same breeding colony each year to breed in the winter and spring months. While on land, penguins remain in burrows to rest, nest, and moult. Nest building (in sand dunes or in rock crevices) occurs from June to December, breeding occurs from August to October, egg laying occurs from August to December, chick raising occurs from August to March and moulting occurs between February and April (during which time they must remain on land).

During winter, little penguins spend most of their time at sea, returning to the burrows to rest and attend to their burrows (DELWP, 2017). Little penguins dive on average between 10 and 30 m in depth, with their preferred food sources being young barracouta, anchovies, red cod, warehou, pilchards and, squid (PenguinFoundation, 2022). They forage mostly from dawn to an hour before dusk, returning to their burrows at dusk (BirdlifeAustralia, 2023). During the breeding season, little penguins forage within 5 - 25 km of the coast, and at other times, foraging can occur up to 75 km from the coast (SARDI, 2011).

Based on OSRA mapping, little penguin colonies in the Gippsland region that are within the EMBA are listed below and can be seen in Figure 1-43:

- Shellback Island (400 breeding pairs);
- Norman Island (1,000 breeding pairs);
- Glennie Group Islands (3,400 breeding pairs);
- Anser Group of Islands (500 breeding pairs);
- Wattle Island (400 breeding pairs);
- Seal Island (1,000 breeding pairs);
- Notch Island (1,000 breeding pairs);
- Rag Island (400 breeding pairs);
- Rabbit Island (8,000 breeding pairs);
- Rabbit Rock (200 breeding pairs);
- Tullaberga Island (900 breeding pairs); and
- Gabo Island (35,000 breeding pairs) (50% of Victorian population).

Other Bass Strait islands with known populations of little penguins within the EMBA are listed below and can be seen in Figure 1-43:

- Babel Island (20,000 pairs);
- Curtis Island group (2,000 individuals);
- Hogan Island group (10,000 individuals);
- Furneaux Island group (> 40,000 pairs); and
- Forsyth, Passage and Gull islands (80,000 pairs).

Additionally, Phillip island (Victoria) supports 32,000 individuals and Betsy Island (Tasmania) has a population of 15,000 pairs. Both islands are outside of the EMBA.

According to the NSW Department of Planning and Environment (DPI, 2019) approximately 25,000 pairs of little penguins nest on islands off the coast of NSW. The largest colonies are on the following islands, all of which are within the EMBA can be seen in Figure 1-43.

- Montague Island;
- Tollgate Island; and
- Brush Island.

The only known mainland breeding colony in NSW is in a secluded cove in the Manly area of Sydney Harbour which is also in the EMBA (DPI, 2019). The BIAs for little penguins within the EMBA is presented in Figure 1-43.

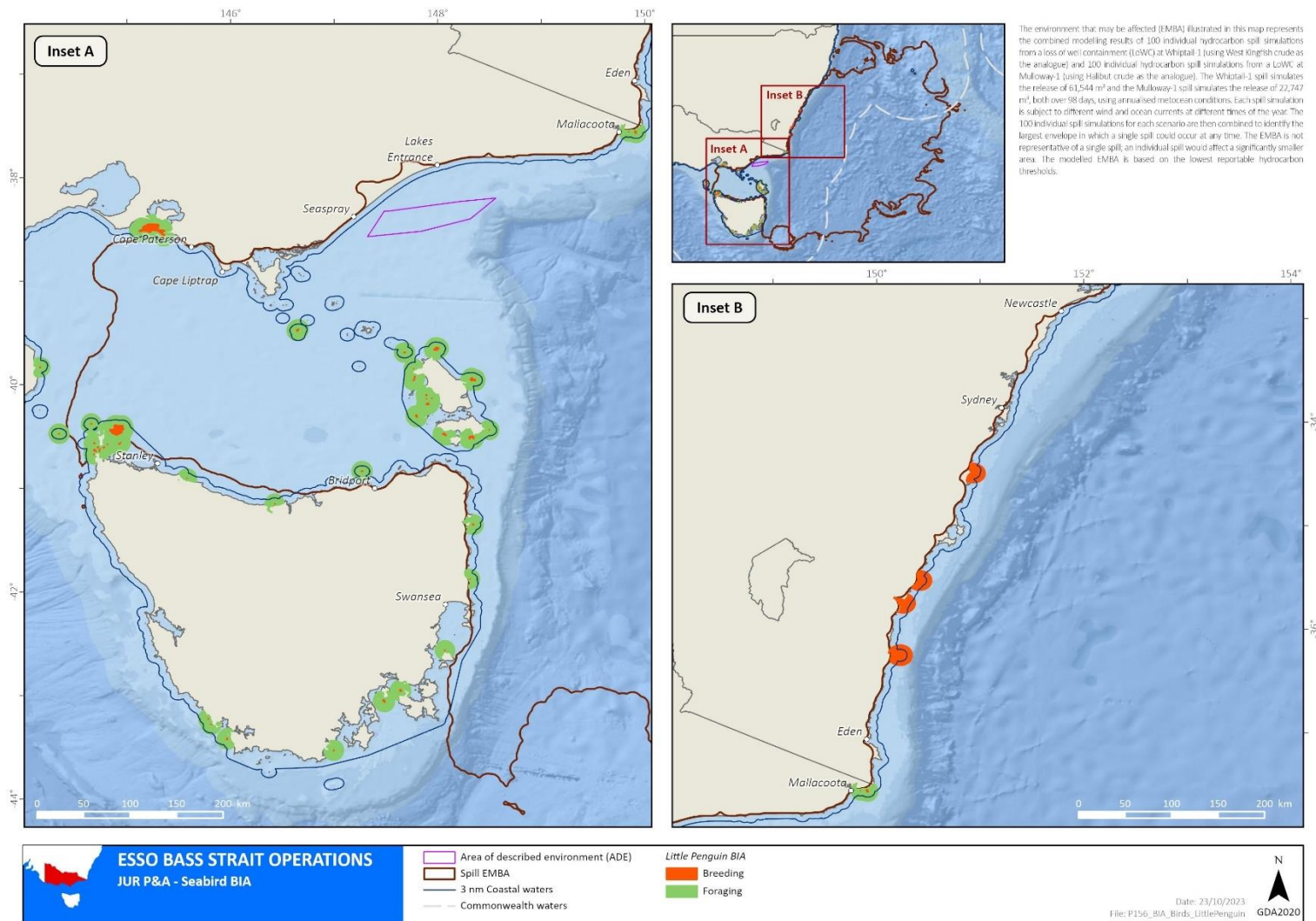


Figure 1-43 Little penguin BIAs intersected by the EMBA

1.4.9.5 Orange Bellied Parrot

The orange-bellied parrot (*Neophema chrysogaster*) is listed as critically endangered under the EPBC Act.

The species breeds in Tasmania during summer, migrates north across the Bass Strait in autumn and over-winters on the mainland. Birds depart the mainland for Tasmania from September to November (Green, 1969). The southward migration is rapid (Stephenson, 1991), so there are few migration records. The northward migration across western Bass Strait is more prolonged (Higgins, 1999).

The parrot's breeding habitat is restricted to southwest Tasmania (outside of the EMBA) see Figure 1-44, where breeding occurs from November to mid-January mainly within 30 km of the coast (Brown, Orange-bellied Parrot Recovery Plan., 1984). The species forage on the ground or in low vegetation (Brown, 1980) (Brown, 1984) (Loyn, 1986). During winter, on mainland Australia, orange-bellied parrots are found mostly within 3 km of the coast. In Victoria, they mostly occur in sheltered coastal habitats, such as bays, lagoons and estuaries, or, rarely, saltworks. They are also found in low samphire hermland dominated by beaded glasswort (*Sarcocornia quinqueflora*), sea heath (*Frankenia pauciflora*) or sea-blite (*Suaeda australis*), and in taller shrubland dominated by shrubby glasswort (*Sclerostegia arbuscula*) (DELWP, 2016).

The range and migration route of the orange-bellied parrot are shown in Figure 1-44.

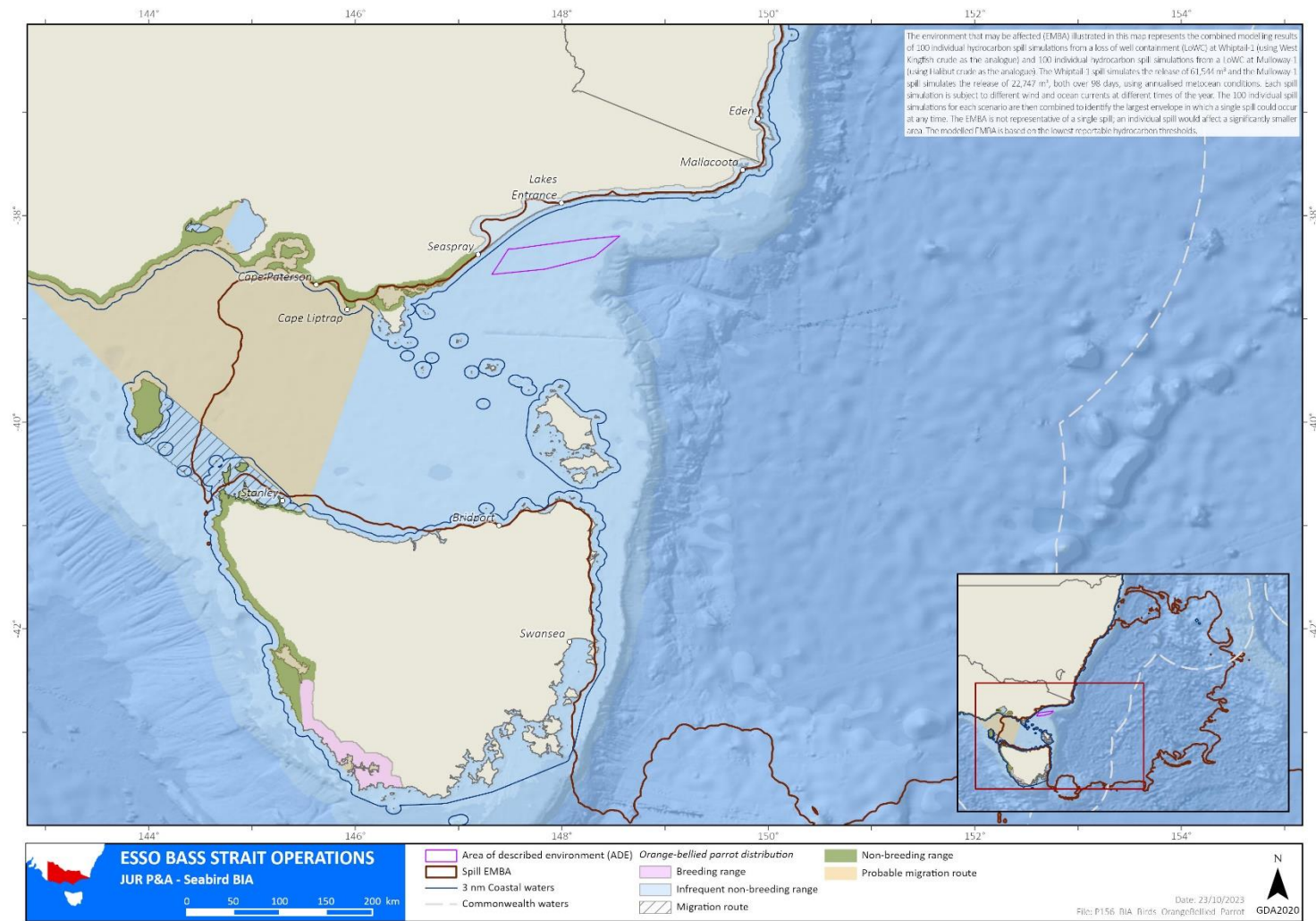


Figure 1-44 The range and migration route of the orange-bellied parrot intersected by the EMBA

1.4.9.6 Shorebirds

This section describes the shorebirds species detected by the PMST, see Appendix B Table B-2 for the extensive list:

- Plovers - There are several EPBC Act-listed plovers that may occur within the EMBA. 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 hooded and red-capped plovers) breed in Asia and the Arctic region and are more likely to be present in Australia during summer, depending on the species. The hooded plover breeds in Australia and builds its nests in sandy oceanic beaches. The location of these nests presents the greatest threat to this species' population, as nests, eggs and chicks are vulnerable to predation and trampling (BirdlifeAustralia, 2023).
- Sandpipers - There are several EPBC Act-listed sandpiper species that may occur within the EMBA. Sandpipers breed in Europe and Asia and migrate to Australia during the southern summer. Sandpipers 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).
- Snipes - There are four EPBC-Act listed snipe species that may occur within the EMBA. These snipe species (other than the Australian painted snipe, which is endemic to Australia) 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 (BirdlifeAustralia, 2023). There are few records of the pin-tailed and Swinhoe's snipe in Victoria, while the Australian painted snipe is known to occur at Mallacoota Inlet (outside of the EMBA). The nest of the Australian painted snipe is usually a scrape in the ground lined with twigs and stalks of grass. The species is threatened by the loss and degradation of wetlands, through drainage and diversion of water for agriculture and reservoirs (BirdlifeAustralia, 2023). Snipes are likely to be present within the EMBA during the summer.
- Godwits - There are three EPBC Act-listed godwit species that may occur within the EMBA. 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 (BirdlifeAustralia, 2023). They have been recorded eating annelids, crustaceans, arachnids, fish eggs and spawn and tadpoles of frogs, and occasionally seeds. The Nooramunga Marine and Coastal Park (within the EMBA) has recorded the largest concentrations of bar tailed godwit in south-eastern Australia. Godwits are likely to be present within the EMBA during the summer.
- Knots - The red and great knots are EPBC Act-listed species that may occur within EMBA. Both the red and great knots have a coastal distribution around the entire Australian coastline when it is present during the southern hemisphere summer (breeding in eastern Siberia in the northern hemisphere summer). The red knot is a medium-sized wader that prefers sandy beach, tidal mudflats and estuary habitats, where they feed on bivalve molluscs, snails, worms and crustaceans (BirdlifeAustralia, 2023). Lake Reeve has supported the largest concentration (5,000) of red knot recorded in Victoria.
- Curlews - Two curlews (eastern and little) are listed under the EPBC Act. Curlews are medium-sized migratory birds that breed in the far north of Siberia and winters in Australasia. The eastern curlew is the world's largest shorebird and is widespread in coastal regions in the north-east and south of Australia, including Tasmania. It is commonly found on intertidal mudflats and sandflats where it uses its long beak to pick the surface and probes for crabs. Curlews are also found on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours, and lagoons (DoE, 2015d). The status of the eastern curlew was

amended from endangered to critically endangered in 2015 because research shows population decline potentially caused by wetland reclamation in some areas of Asia. In Victoria, the main strongholds are in Corner Inlet (within the EMBA) and Western Port Bay (outside the EMBA), with smaller populations in Port Phillip Bay and scattered elsewhere along the coast. Eastern curlews are found on islands in Bass Strait and along the northwest, northeast, east and southeast coasts of Tasmania. Historically, sightings have been recorded in Bass Strait and depending on the time of year, curlews may be present in the EMBA (DoE, 2015c). The little curlew breeds in Siberia and is seen on passage through Mongolia, China, Japan, Indonesia and New Guinea. In Australia, the little curlew is a bird of coastal and inland plains of the north where it often occurs around wetlands and flooded ground. They often form large flocks, occasionally comprising thousands of birds and sometimes associate with other insectivorous migratory shorebirds.

1.4.10 Marine Pests

It is widely recognised that marine pests can become invasive and cause significant impacts on economic, ecological, social and cultural values of marine environments. Impacts can include the introduction of new diseases, alteration of ecosystem processes and reduction of native biodiversity, causing major economic loss and disrupting human activities (Brusati, 2007).

In the SEMR, 115 invasive marine species (IMS) have been introduced (NOO, 2002a). Several introduced species have become pests either by displacing native species, dominating habitats, or causing algal blooms. In NSW waters, six listed marine pest species occur (CoA, 2012). The following marine pests are found within the waters of the EMBA:

- Caulerpa (*Caulerpa taxifolia*) – typically found in water depths up to 100m, exposed and sheltered estuaries, coastal lagoons and bays, rock, sand, mud and seagrass beds.
- European shore crab (*Carcinus maenas*) – prefers bays and estuaries but found on all types of shores at depths up to 60m, tolerates temperatures up to 30°C.
- European fan worm (*Sabella spallanzanii*) - attaches to hard surfaces, artificial structures, rocks, shells and seagrass on soft sediments, found in sheltered waters and depths up to 30m.
- Japanese goby (*Tridentiger trigonocephalus*) - prefers estuaries and rocky reef areas.
- New Zealand screw shell (*Maoricolpus roseus*) - prefers sand, mud or gravel in intertidal to subtidal areas, can be found in depths up to 30m.
- Pacific oyster (*Crassostrea gigas*) – found on hard substrate in intertidal and shallow subtidal areas in depths up to 3m, favours brackish waters in sheltered estuaries but tolerates a range of salinity and water quality and can occur offshore.
- Northern Pacific seastar (*Asterias amurensis*) - found in bays, estuaries and reefs from high tide mark to 200m, in a range of habitats including seagrass, mussel beds, artificial structures, rock pools and rocky reefs.

1.5 Cultural Heritage Values

Cultural heritage includes both tangible and intangible values, and the definition of cultural heritage has evolved in recent decades as non-tangible cultural heritage continues to develop. Non-tangible cultural heritage includes oral traditions, performing arts, social practices, rituals, festive events, knowledge, and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts (UNESCO, 2023). Tangible cultural heritage includes artefacts, monuments, a group of buildings and sites and museums that have a diversity of values including symbolic, historic, artistic, aesthetic, ethnological or anthropological, scientific, and social significance. Cultural heritage also captures natural heritage such as culturally significant landscapes (UNESCO, 2009).

This section discusses indigenous and maritime heritage. World, National and Commonwealth heritage sites relevant to the EMBA can be seen in sections 1.1.1, 1.1.2 and 1.1.3.

1.5.1 Indigenous

“Gunai/Kurnai” is the name of the indigenous group who have inhabited the Gippsland region for at least 18,000 years (Ramahyuck, 2023). The Gunaikurnai Land and Waters Aboriginal Corporation (GLAWAC, Our Country, 2023) describe their Country as:

“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 our history”.

According to the Gunaikurnai Whole-of-Country Plan (GLAWAC, 2015) the Gunaikurnai people are recognised as Traditional Owners over approximately 1.33 million ha in Gippsland extending from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, and including 200 m of offshore sea territory. The Gunaikurnai people also have interests and ancestral and historical connections to other places beyond this recognised area. They also describe Sea Country is equally important, with a huge diversity of marine life that supports rich tourism and fishing industries. Sea country is discussed further in Section 1.5.1.2.

1.5.1.1 Indigenous Protected Areas

Indigenous Protected Areas (IPAs) are an essential component of Australia’s National Reserve System, which is the network of formally recognised parks, reserves, and protected areas across Australia, designed to protect the nation’s biodiversity. IPAs protect cultural heritage into the future, and provide employment, education, and training opportunities for Indigenous people in remote areas. There are five IPAs that occur within the EMBA, on and around Flinders Island to the southwest as seen in Figure 1-45. They are all important rookeries for mutton birds and important cultural resources for Tasmanian Aboriginal people.

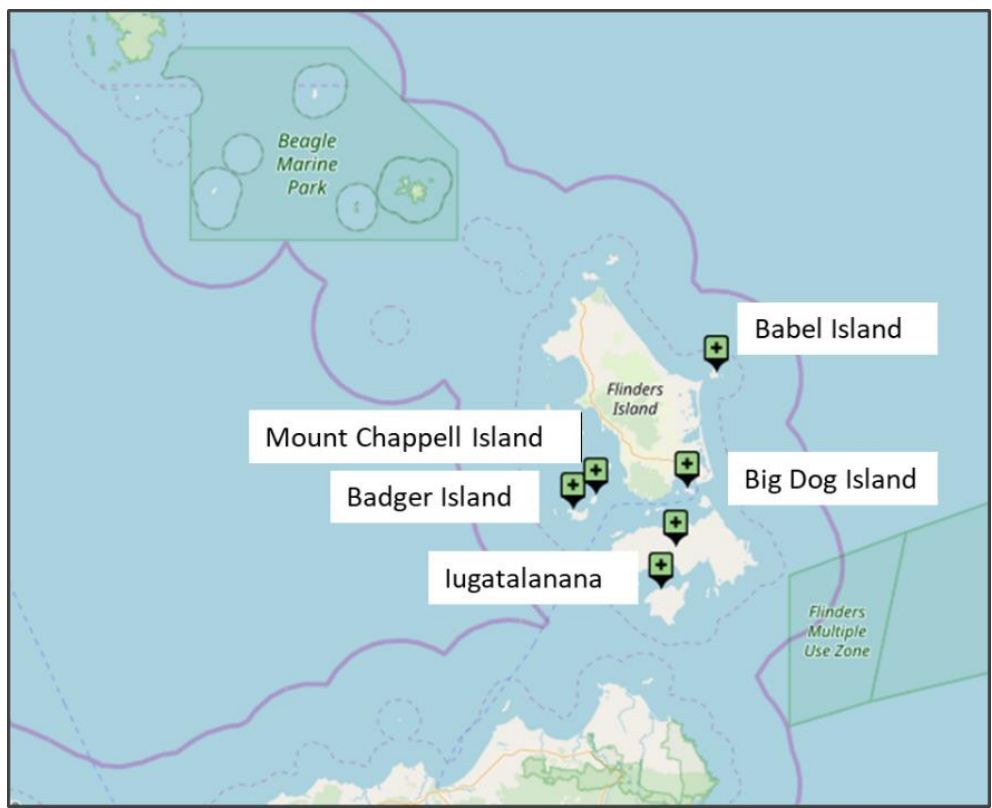


Figure 1-45 IPAs within the EMBA

1.5.1.2 Sea Country

Country is the term often used by indigenous people to describe the lands, waterways, and seas to which they are connected. The term contains complex ideas about law, place, custom, language, spiritual belief, cultural practice, material sustenance, family, and identity (AIATSIS, 2022). Sea Country, also known as Saltwater Country, is of particular importance for this activity, as the EMBA may extend into areas of known Sea Country.

Smyth and Isherwood (2016) describe Sea Country as all estuaries, beaches, bays, and marine areas collectively, within a traditional estate. Sea Country contains evidence of the ancient mystical events by which all geographic features, animals, plants, and people were created. Sea Country contains sacred sites and contains tracks (or song lines) along which mythological beings travelled during the creation period (Smyth D. a., 2016). The sea, like the land, is integral to the identity of First Nations groups. Connection to Sea Country is accompanied by a complexity

of cultural rights and responsibilities. Formal recognition of Sea Country rights lags considerably compared to land rights; this could be for a range of reasons including conflicting perspectives and opinions on traditional custodianship of land and how far it extends (Smyth D. a., 2016). First Nations people see themselves as having responsibilities and rights across the land and sea boundaries that have been put in place over the last 200 years, this includes land that was once inundated by sea, and land that now lies beneath the sea (NOO, 2002b).

In April 2021, the Australian Government committed funding to the Sea Country IPA Program, under which grants will be provided to Indigenous organisations to expand existing IPAs and create new IPAs (DCCEEW, 2023f). The program seeks to increase the area of sea within IPAs in Australia. Ten Sea Country IPA consultation projects were announced in May 2022, including the Nanjit to Mallacoota Sea Country IPA consultation project, which extends from Corner Inlet to the Victoria/ NSW border (Figure 1-46) which overlaps with the coastal waters of the EMBA. The GLAWAC has signed an agreement with the Australian Government to start the process of establishing the Sea Country IPA and is currently undertaking engagement with families and clans who may have an interest in participating in the development of the IPA (GLAWAC, 2023). The proposed Sea Country IPA area is illustrated in Figure 1-46 and is located in coastal waters along the eastern coast of Victoria from east of Wilsons Promontory to Mallacoota, including the Gippsland Lakes and estuaries around Mallacoota (within the EMBA).

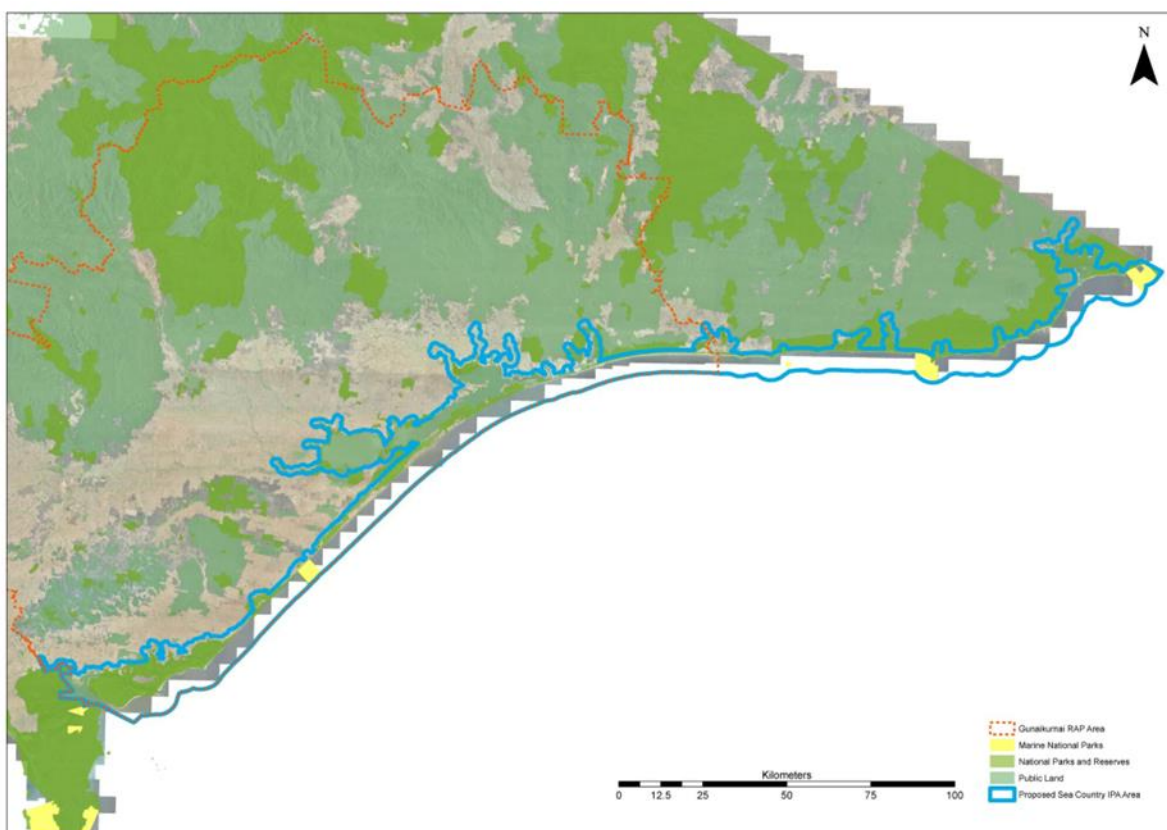


Figure 1-46 Proposed Nanjit to Mallacoota Sea Country IPA

1.5.1.3 Native Title

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

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

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

The Gunaikurnai people hold native title over much of Gippsland. The native title determination area (Tribunal file no. VCD2010/001) covers approximately 45,000 ha and extends from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, (Figure 1-47). It also includes 200 m of offshore sea territory between Lakes Entrance and Marlo. The area includes 10 parks and reserves that are jointly managed by the Victorian government and the Gunaikurnai people (NNTT, 2010). The Gunaikurnai people have occupied, used, and managed the coastal land and sea environment along the coastline adjacent to the EMBA for many thousands of years. These include areas that were dry land before the current sea level stabilised about 5,000 years ago. During the last Ice Age approximately 25,000 years ago, coastlines were on average 125m lower than the present day (Umwelt, 2022). The Gunaikurnai peoples cultural and spiritual connection with these landscapes continues, even where evidence of previous occupation now lies beneath the ocean (GLAWAC, 2015).

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

The Gunaikurnai people see no distinction between the land and the sea – it is all part of Country (GLAWAC, 2023). ‘Sea Country’ can include parts of open ocean, beaches, land and freshwater on the coast. It encompasses all living things, beliefs, values, creation spirits and cultural obligations connected to an area (Adelaide, 2023). Water is of particular cultural significance to First Nations people as an integral part of songs, ceremonies, hunting and collecting, and other activities that bind people to their country and each other, including fishing (Smyth L. E., 2018).

Coastal environments are an integrated cultural landscape/seascape that is conceptually very different from the broader Australian view of land and sea. Protecting this cultural heritage is a major concern for First Nation people (NOO, 2002b).

There are no native title determinations in NSW within the EMBA, however a Native Title Claimant Application was registered by the South Coast People (NSD1331/2017) for an area covering the NSW south coast from the south of Sydney to Eden, including the coastal waters (NNTT, 2018) (Figure 1-47). Indigenous places along the southern NSW coast include Barlings Beach, Ten Pelican Lake BrouBarunguba Aboriginal Place, Mystery Bay Fish Trap, Merriman Island and Bermagui Waterhole (OEH, 2019).

There are no native title determinations in Tasmania, although there are areas of indigenous cultural significance and indigenous protected areas including Mt Chappell Island, Badger Island, Babel Island, Great Dog Island in the Ferneaux Group (DPMC, 2019).

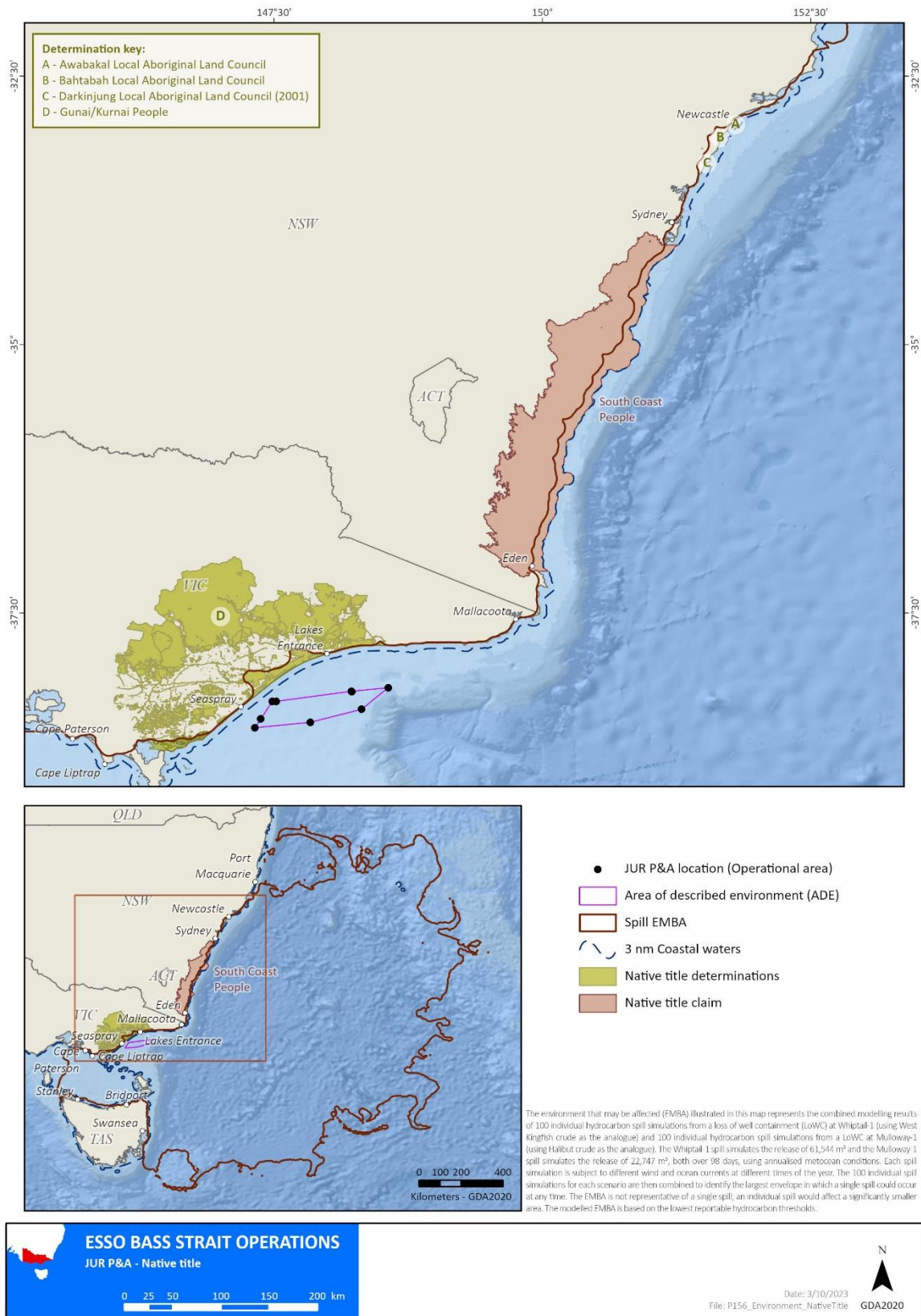


Figure 1-47 Native Title claims and determinations intersected by the EMBA

1.5.2 Maritime

A search of the National Shipwrecks Database which includes all known shipwrecks in Australian waters, identified hundreds of historic shipwrecks within the EMBA. Shipwrecks over 75 years old are protected within Commonwealth waters under the *Underwater Cultural Heritage Act 2018* (Cth).

In addition to the general protection provided to underwater heritage sites, the *Underwater Cultural Heritage Act 2018* also provides that an area containing protected underwater heritage may be declared to be a protected zone. These zones may be established for a number of reasons including conservation, management or public safety considerations. There are 28 shipwrecks across Australia that have a protection zone in place (Figure 1-48). The four protection zones within the EMBA are listed below:

- Clonmel (1841) – Victoria
- SS Glenelg (1900) – Victoria
- SS Federal (1901) - Victoria
- M-24 (Japanese Midget Submarine) (1942) – NSW

Figure 1-49 maps the location of known shipwrecks within the EMBA.

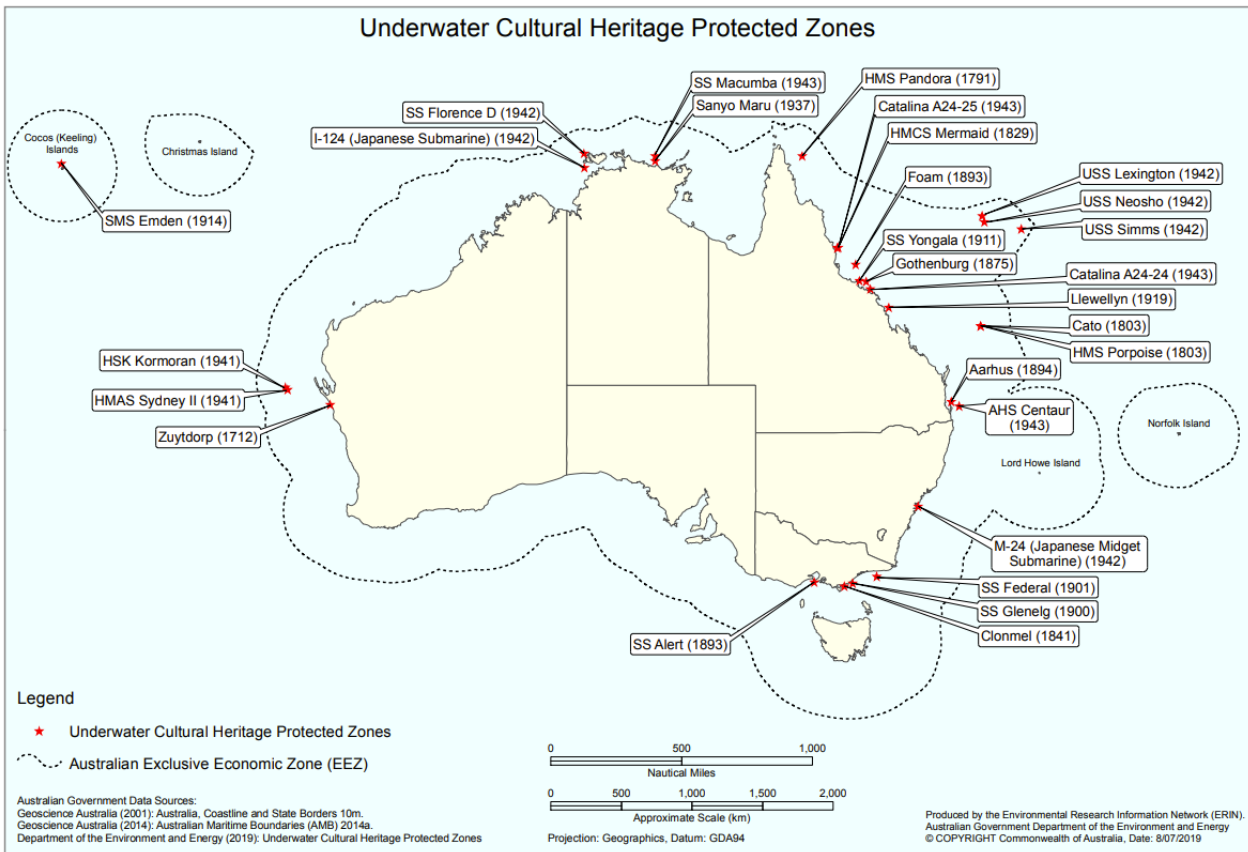


Figure 1-48 Shipwreck protection zones within Australia (ERIN, 2019)

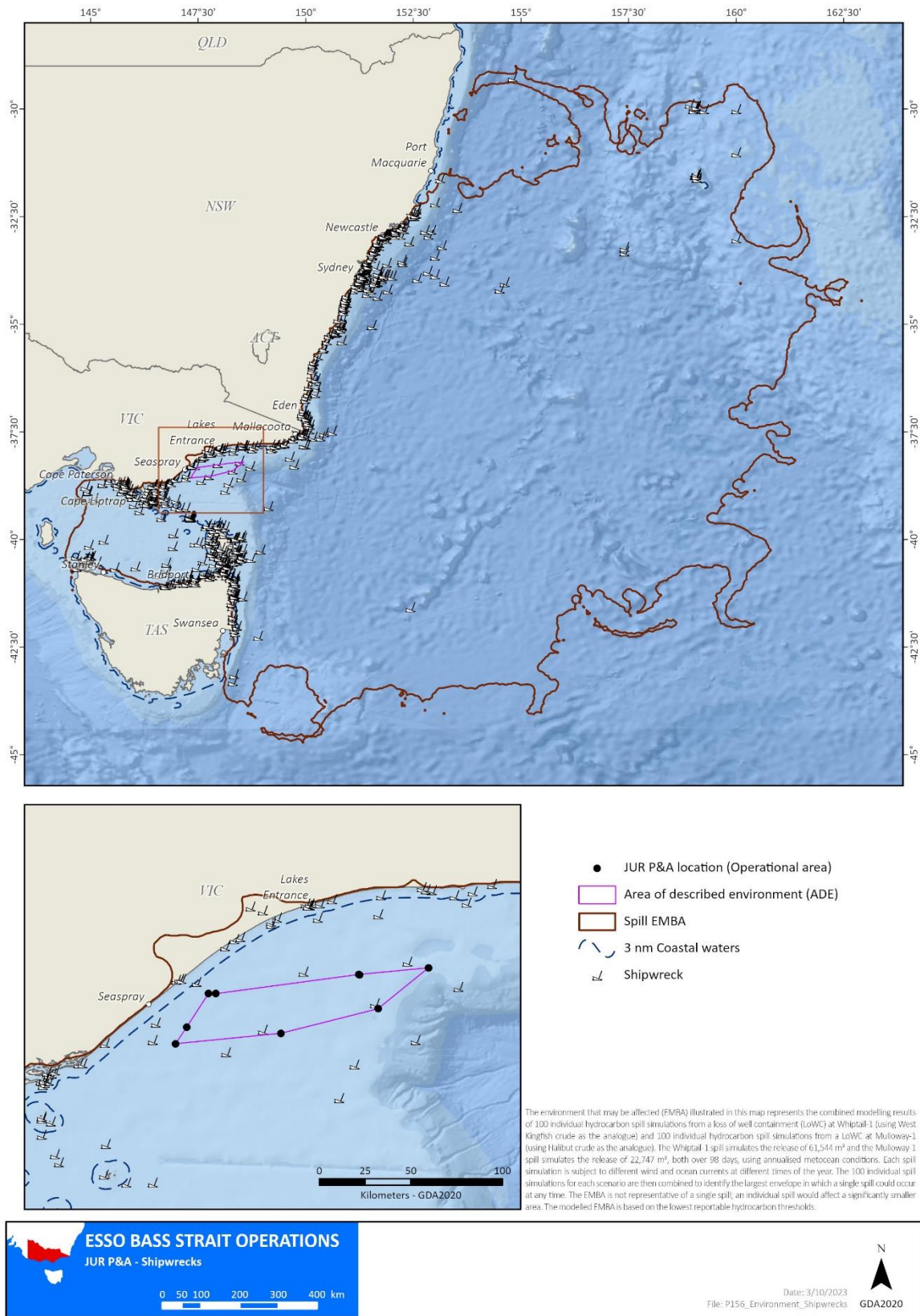


Figure 1-49 Shipwrecks within the EMBA

1.6 Socio-economic Environment

The Social values of the environment can be defined in many ways and the relative importance of the values will vary depending on the perspective and interests of the people, groups or organisations affected (or otherwise). Social values, therefore, can be described in terms of conservation and biodiversity values, economic drivers, or cultural significance. This section describes the values of the socio-economic and recreational activities in the EMBA.

1.6.1 Commercial Fishing

Several Commonwealth, Victorian, Tasmanian & NSW commercial fisheries are licensed to operate in and around the EMBA. These are described in the following sections.

1.6.2 Commonwealth Fisheries

There are 22 Commonwealth fisheries that operate within Australian waters. Commonwealth fisheries are managed by the AFMA under the *Fisheries Management Act 1991*. Their jurisdiction covers the area of ocean from 3 nm from the coast out to the 200 nm limit (the extent of the Australian Fishing Zone [AFZ]). Table 1-6 summarises the commonwealth fisheries with jurisdiction to fish within the EMBA based on the latest fishery status reports 2023 (Butler, 2023.). However, the maps within this section contain fishing intensity data for 2020 as this is the latest data available.

Table 1-6 Commonwealth fisheries within the EMBA

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
Bass Strait Central Zone Scallop Fishery (BSCZSF)	Commercial scallop (<i>pecten fumatus</i>)	<p>The BSCZSF operates in the central area of Bass Strait between the Victorian and Tasmanian scallop fisheries (see below sections). In 2022, fishing was permitted throughout the area of the fishery, except in four scallop beds that were closed under the BSCZSF harvest strategy. Fishing intensity in 2022 was concentrated on beds northeast of Flinders Island. This was also reflected in the 2020 fishing intensity (Figure 1-50).</p> <p>The 2022 fishing season attained a catch of 495 tonnes (t) valued at \$1.4 million. 35 fishing permits and 10 fishing vessels were in active in 2022 and the primary landing ports were Beauty Point, Devonport, and Stanley (Tas); Apollo Bay, Lakes Entrance, Melbourne, Port Welshpool, Queenscliff, and San Remo (Vic). Scallop dredges are the fishing method used in this fishery.</p>	57.3%
Eastern Tuna and Billfish Fishery (ETBF)	Striped marlin (<i>kajikia audax</i>), Swordfish (<i>xiphias gladius</i>), albacore (<i>thunnus alalunga</i>), bigeye tuna (<i>thunnus obesus</i>) and yellowfin tuna (<i>thunnus albacares</i>)	<p>The ETBF operates in the EEZ and adjacent high seas, from Cape York QLD to the Victoria – SA border, including waters around Tasmania and the high seas of the Pacific Ocean. Most of the catch in the fishery is taken with pelagic longlines, although a small quantity is taken using minor-line methods. The fishing intensity in 2022 was concentrated around the entire NSW coast and majority of the QLD coast. Similarly in the 2020 season (Figure 1-51).</p> <p>Catch for the 2022 fishing season was 4,032 t valued at \$34.7 million, with 42 active vessels. The primary landing ports are Bermagui, Coffs Harbour and Ulladulla (NSW), Cairns, Mooloolaba and Southport (QLD).</p>	19.1%
Small Pelagic Fishery (SPF)	Blue mackerel (<i>scomber australasicus</i>), jack mackerel (<i>trachurus declivis</i>), redbait (<i>emmelichthys nitidus</i>) and Australian sardine (<i>sardinops sagax</i>)	<p>The SPF extends from southern Queensland to southern WA. The fishery includes purse-seine and midwater trawl fishing methods. The maximum area fished for the 2022-23 season was along the far eastern coast of Victoria and some areas along the NSW coast. Similarly, to 2020, however the eastern coast of Tasmania was also fished in 2020 (Figure 1-52).</p> <p>Catch for the 2022-2023 fishing season was 21,080 t with no value assigned due to confidentiality. 33 fishing permits and 6 vessels were active in the 2022-23 fishing season, with the primary landing ports being Eden and Ulladulla (NSW).</p>	20.7%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
Southern and Eastern Scalefish and Shark Fishery (SESSF)	See CTS, SHS, SGSHS & ECSTS	The SESSF is a multisector, multi-gear and multispecies fishery, targeting a variety of stocks. The management area covers almost half the area of the AFZ and spans both Commonwealth waters and the waters of several Australian states under Offshore Constitutional Settlement arrangements. The Commonwealth Trawl Sectors (CTS), Scalefish Hook Sectors (SHS) and the East Coast Deepwater Trawl Sector (ECDTS) all have jurisdiction to fish within the EMBA (see Figure 1-53) and are described below.	21.3%
The Commonwealth Trawl Sector (CTS)	Blue grenadier (<i>Macruronus novaezelandiae</i>), tiger flathead (<i>Neoplatycephalus richardsoni</i>), orange roughy, pink ling and eastern school whiting (Based on main species landed in 2022-23 fishing season)	The CTS extends south from Barrenjoey Point in northern NSW to east of Kangaroo Island off SA. The CTS and the SHS are major domestic sources of fresh fish for the Sydney and Melbourne markets. The CTS predominantly uses demersal otter trawl (Figure 1-54) with fishing intensity being saturated around eastern Victoria for both the 2022-23 season and 2020. And Danish-seine fishing methods (Figure 1-55) with fishing intensity being saturated around eastern Victoria and eastern Tasmania for both the 2022-23 season and 2020 season. Features and statistics for the CTS and the SHS are combined, during the 2022-23 fishing season the sectors attained a total catch of 13,381 t, however, at the time of the publication the value of the catch was not available. There were 31 trawl vessels and 18 Danish-seine active vessels during the 2021-22 fishing season. Eden, Sydney and Ulladulla (NSW), Hobart (Tas), Lakes Entrance and Portland (Vic) are the primary landing ports.	44.1%
Scalefish Hook Sector (SHS)	Blue grenadier (<i>Macruronus novaezelandiae</i>), tiger flathead (<i>Neoplatycephalus richardsoni</i>), orange roughy, pink ling and eastern school whiting (Based on main species landed in 2022-23 fishing season)	The SHS extends around south-eastern Australia to the border between SA and WA (Figure 1-56). The SHS uses a variety of longline and dropline hook fishing methods, some of which are automated. The maximum area fished in the 2022-2023 and 2020 occurred in eastern and western Victoria and along the coast of Tasmania (excluding the northern coast) (Figure 1-56). See the CTS for the catch and value information during the 2022-23 fishing season. There were 12 scalefish hook active vessels during the 2022-23 fishing season. Eden, Sydney and Ulladulla (NSW), Hobart (Tas), Lakes Entrance and Portland (Vic) are the primary landing ports.	23.4%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
Shark Gillnet and Shark Hook Sectors (SGSHS)	Gummy shark (<i>Mustelus antarcticus</i>)	<p>Most fishing in the SGSHS using nets occurs in Bass Strait, while most fishing using hooks occurs off SA. The SGSHS uses demersal gillnet and demersal longline to target gummy shark (<i>Mustelus antarcticus</i>) although, sawsharks (<i>Pristiophorus cirratus</i> and <i>P. nudipinnis</i>) and elephantfish (<i>Callorhinchus milii</i>) are caught as byproducts. The shark gillnet sector fishing intensity for 2022-2023 was saturated in eastern Victoria and North east Tasmania, similarity in 2020, however central bass strait was also fished (Figure 1-57). The hook sector maximum area fished in the 2022-23 season was in eastern and western Victoria and majority of the Tasmanian coast. However, during the 2020 season fishing intensity was saturated in northeast tasmainaina between the mainland and Flinders Island (Figure 1-58).</p> <p>During the 2022-23 fishing season the SGSHS attained a total catch of 2,080 t, however, at the time of the publication the value of the catch was not available.</p>	21.2%
East Coast Deepwater Trawl Sector (ECDTS)	Alfonsino (<i>beryx splendens</i>)	<p>The ECDTS is located beyond the 4,000 m isobath of the continental margin off eastern Australia (Figure 1-59). The ECDTS began as an exploratory fishery in the early 1990s, primarily taking small quantities of orange roughy (<i>Hoplostethus atlanticus</i>) and other deepwater species near Lord Howe Rise. Since 2000, the fishery has targeted mostly alfonsino (<i>beryx splendens</i>).</p> <p>There was no effort in the fishery between 2013-14 and 2017-18, and 2020-2023. The most recent trawl hours were reported in 2018-19 (9 hours). The primary landing ports were formerly Sydney & Brisbane.</p>	13.8%
Southern Bluefin Tuna Fishery (SBTF)	Southern bluefin tuna (SBT) (<i>thunnus maccoyii</i>)	<p>The SBTF spans the Australian Fishing Zone. Young fish (1-4 years of age) move from the spawning ground in the north-east Indian Ocean into the Australian EEZ and southwards along the WA coast. Since 1992, most of the Australian catch has been taken by purse seine, targeting juvenile southern bluefin tuna (2-4 years of age) in the GAB. This catch is transferred to aquaculture farming operations off the coast of Port Lincoln in SA, where the fish are grown to a larger size to achieve higher market prices. The fishing methods used by the SBTF include purse seine, pelagic longline and minor line. The fishing intensity for the SBTF fishery was saturated along the south eastern coast of NSW in the 2021-22 season, similarly in the 2020 season (Figure 1-60).</p> <p>During the 2022 fishing season attained 5,972 t of catch valued at \$35.45 million and 85 fishing permits were present along with 30 active vessels. The primary landing port is Port Lincoln (SA).</p>	19.2%

Commonwealth fishery	Target species	Description	Percentage overlap with the EMBA
Southern Squid Jig Fishery (SSJF)	Gould's squid (<i>nototodarus gouldi</i>)	<p>The SSJF is located off NSW, Victoria, Tasmania and SA, and in a small area of oceanic waters off southern QLD. The fishery typically operates at night in continental-shelf waters between depths of 60 m and 120 m using a single-method (jigging). The maximum area fished during the 2022 season was in western and eastern Victoria as well as along the north easter and eastern coast of Tasmania. However, in the 2020 fishing season the maximum area fished was situated in Western Victoria, central bass straight and majority of the waters off Tasmania (Figure 1-61)</p> <p>During the 2022 fishing season the SSJF had six active vessels attaining 394 t of catch valued at \$1.86 million. The primary landing ports are Triabunna (Tas), Queenscliff, Portland and Apollo Bay (Vic).</p>	25.7%

Source: (Butler, 2023.)

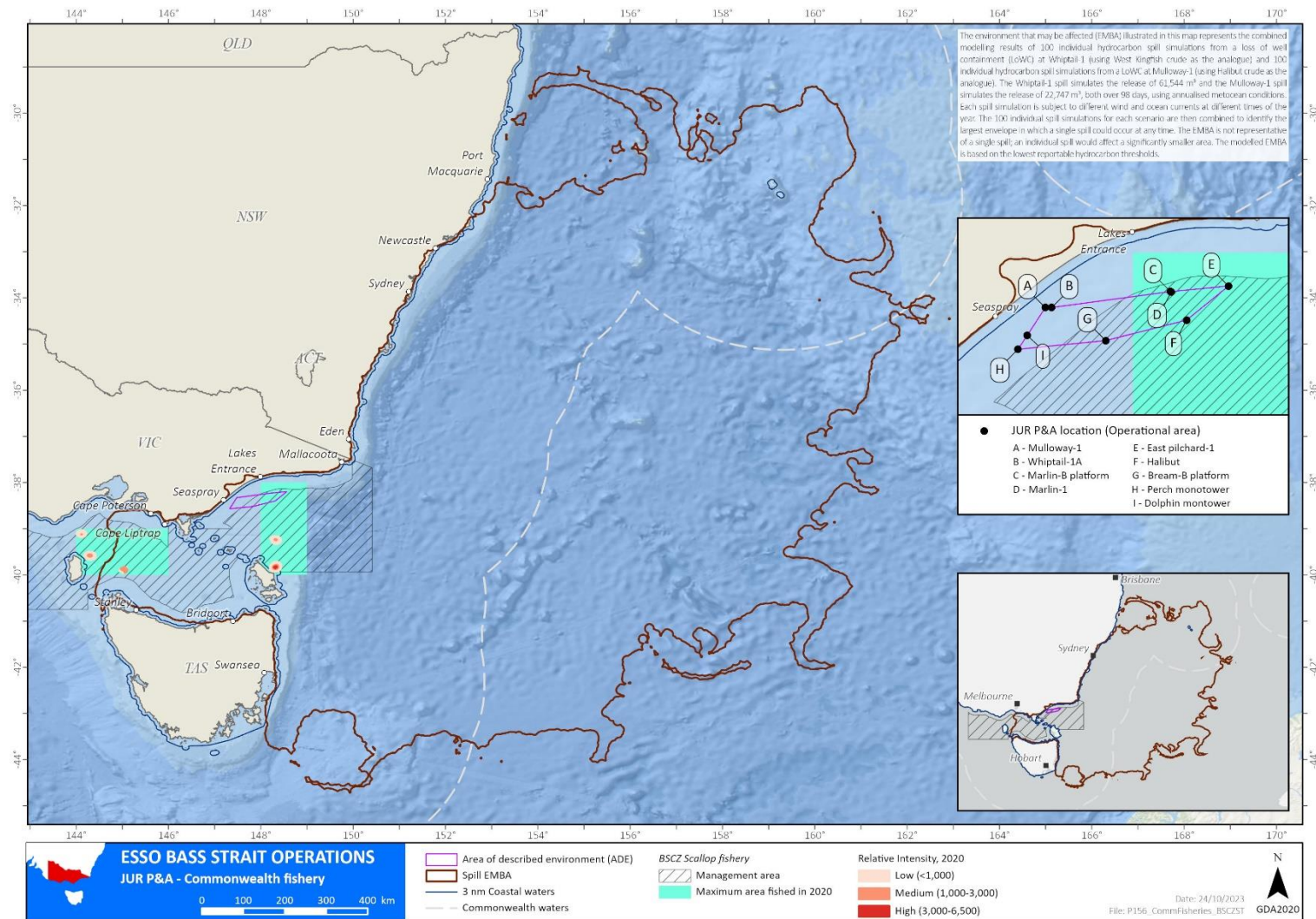


Figure 1-50 BSCZSF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

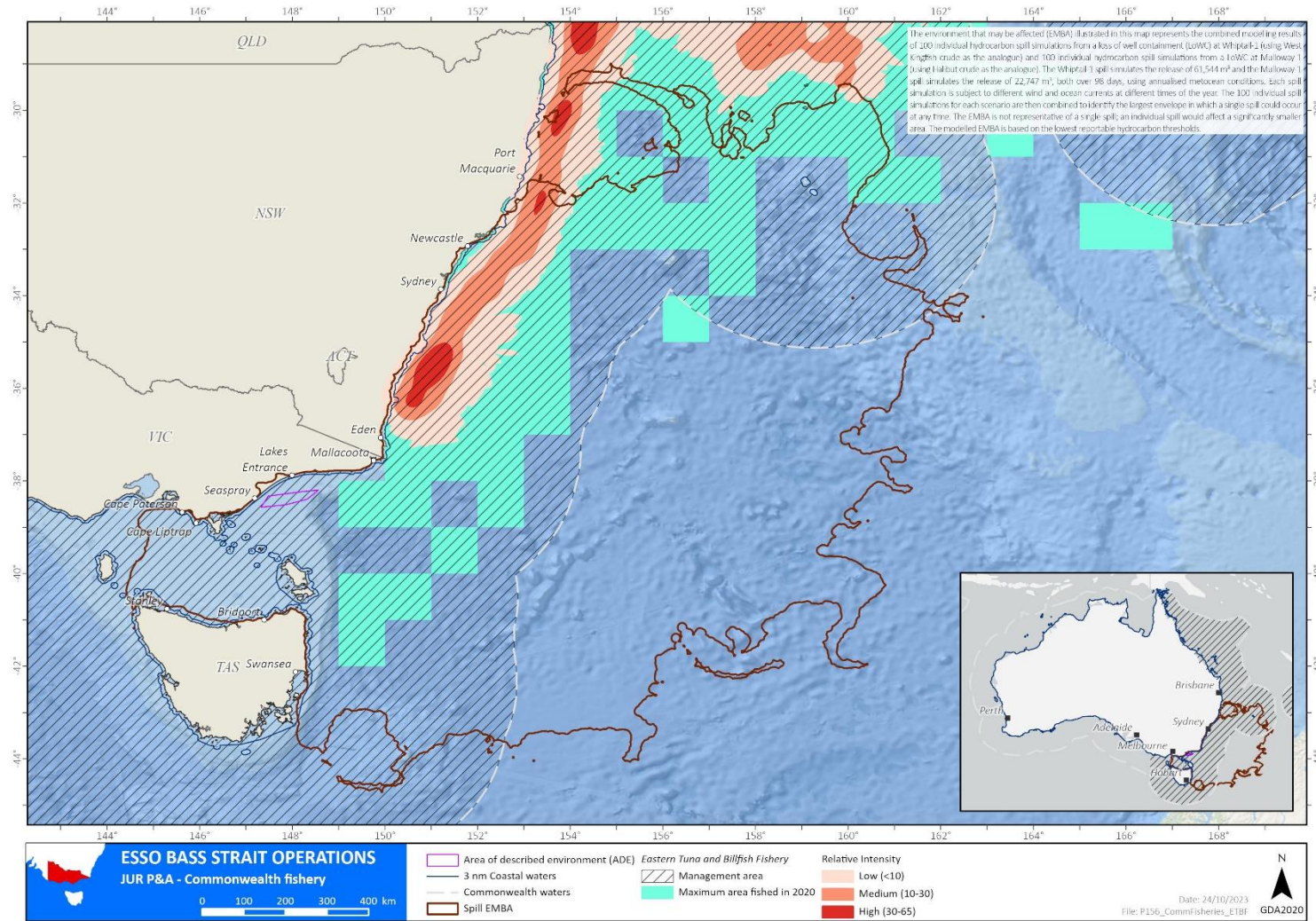


Figure 1-51 ETBF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

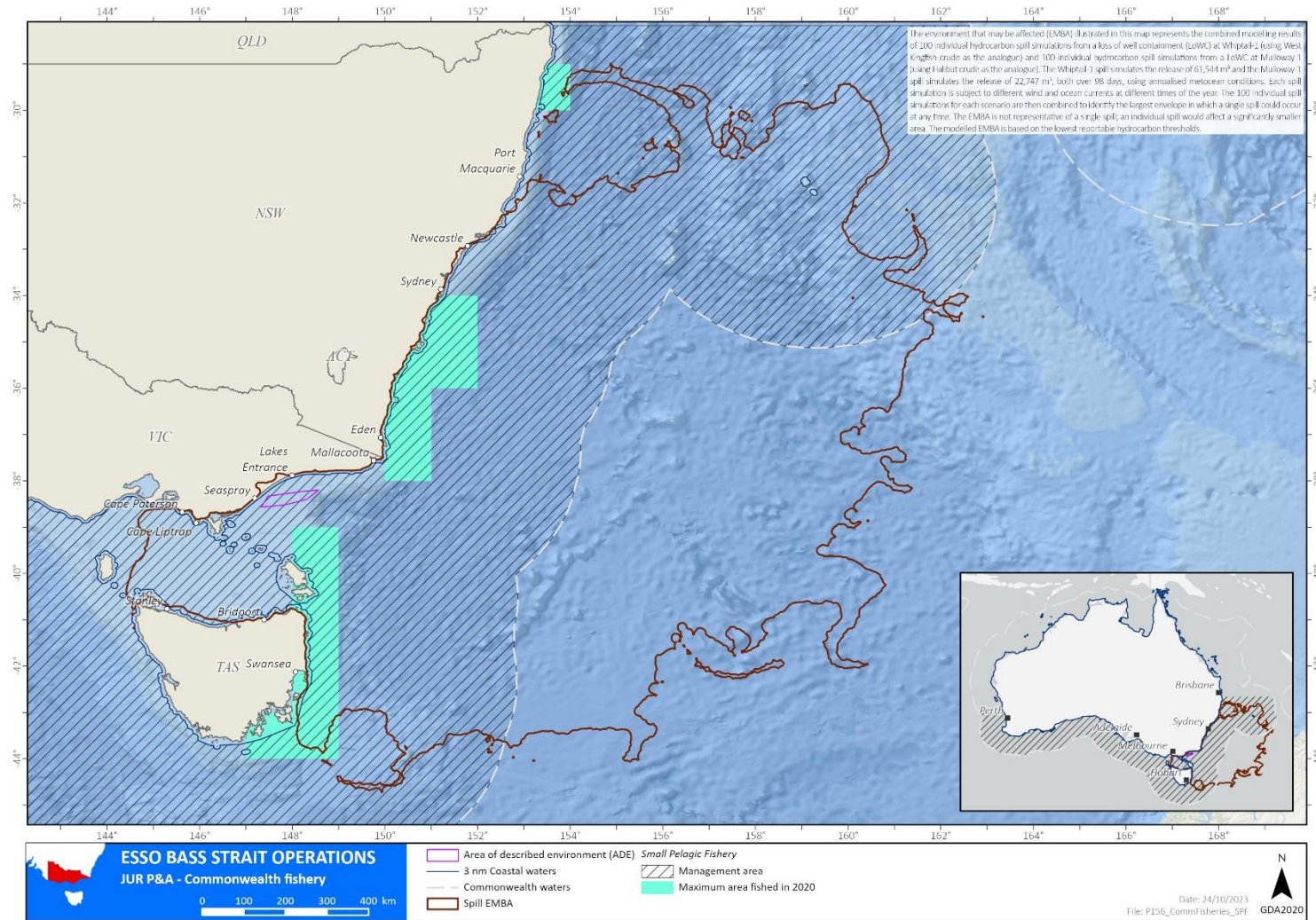


Figure 1-52 SPF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

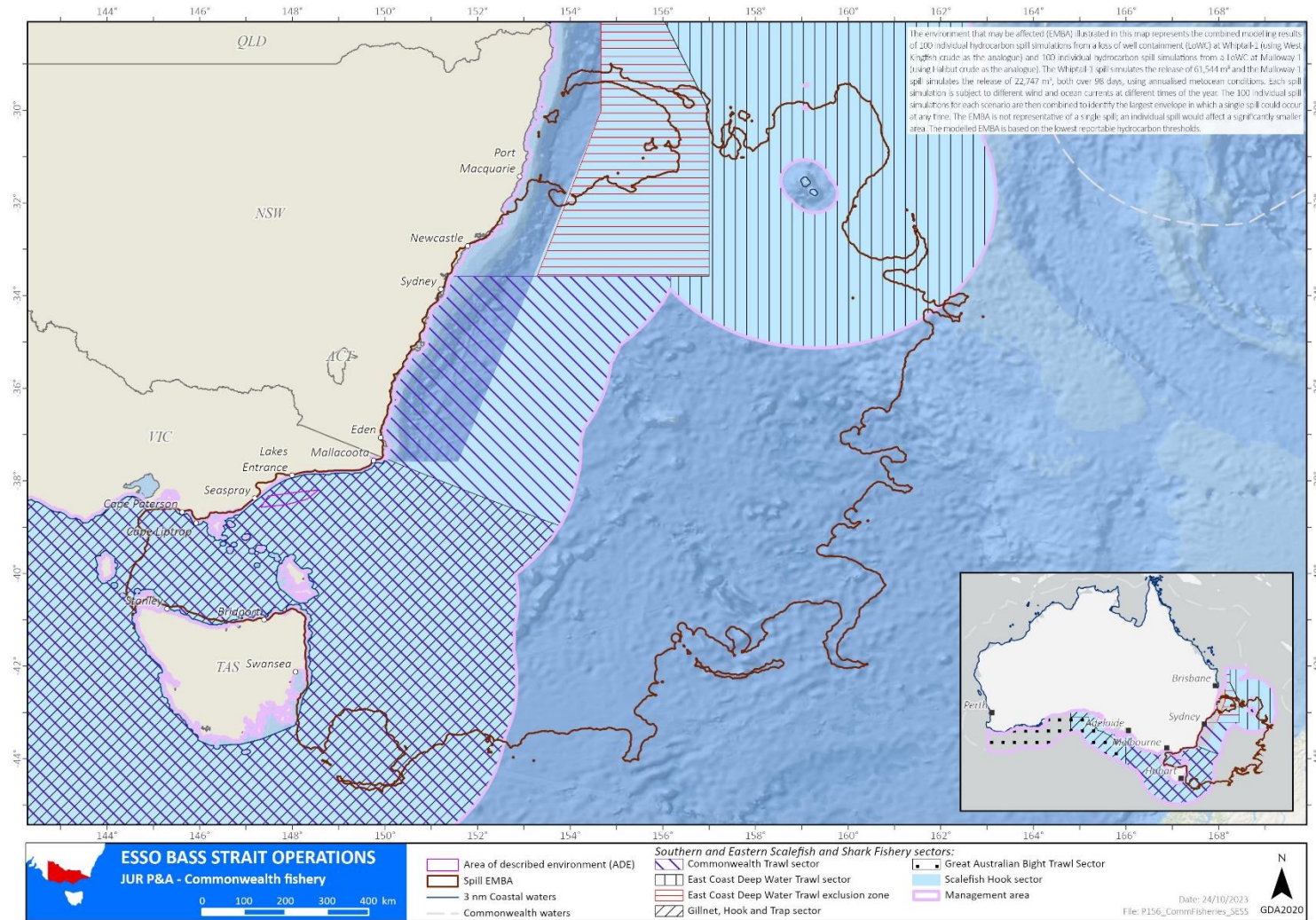


Figure 1-53 SESSF fishery sector zones intersected by the EMBA

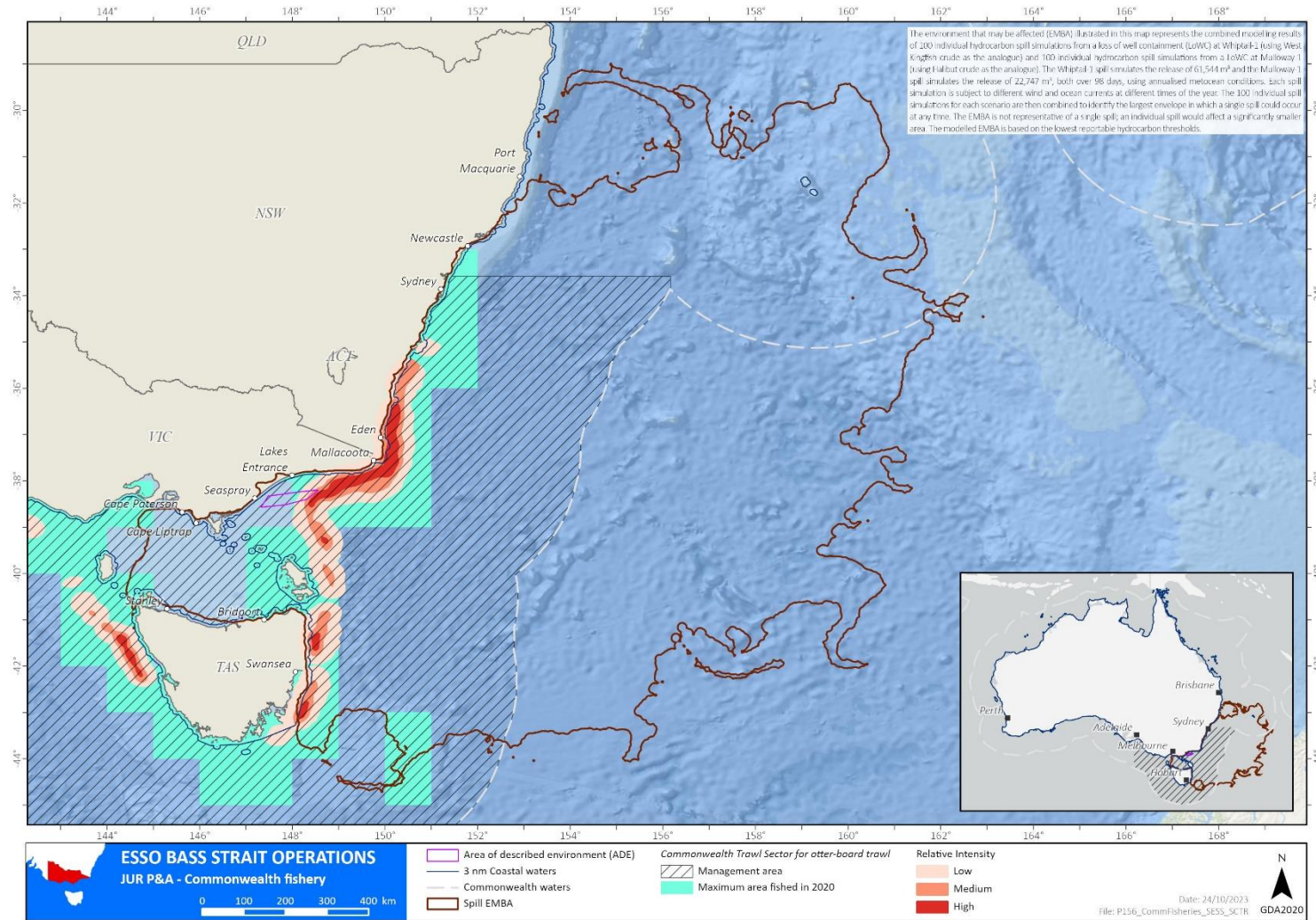


Figure 1-54 SESSF CTS otter-board jurisdiction and fishing intensity (2020 season) intersected by the EMBA

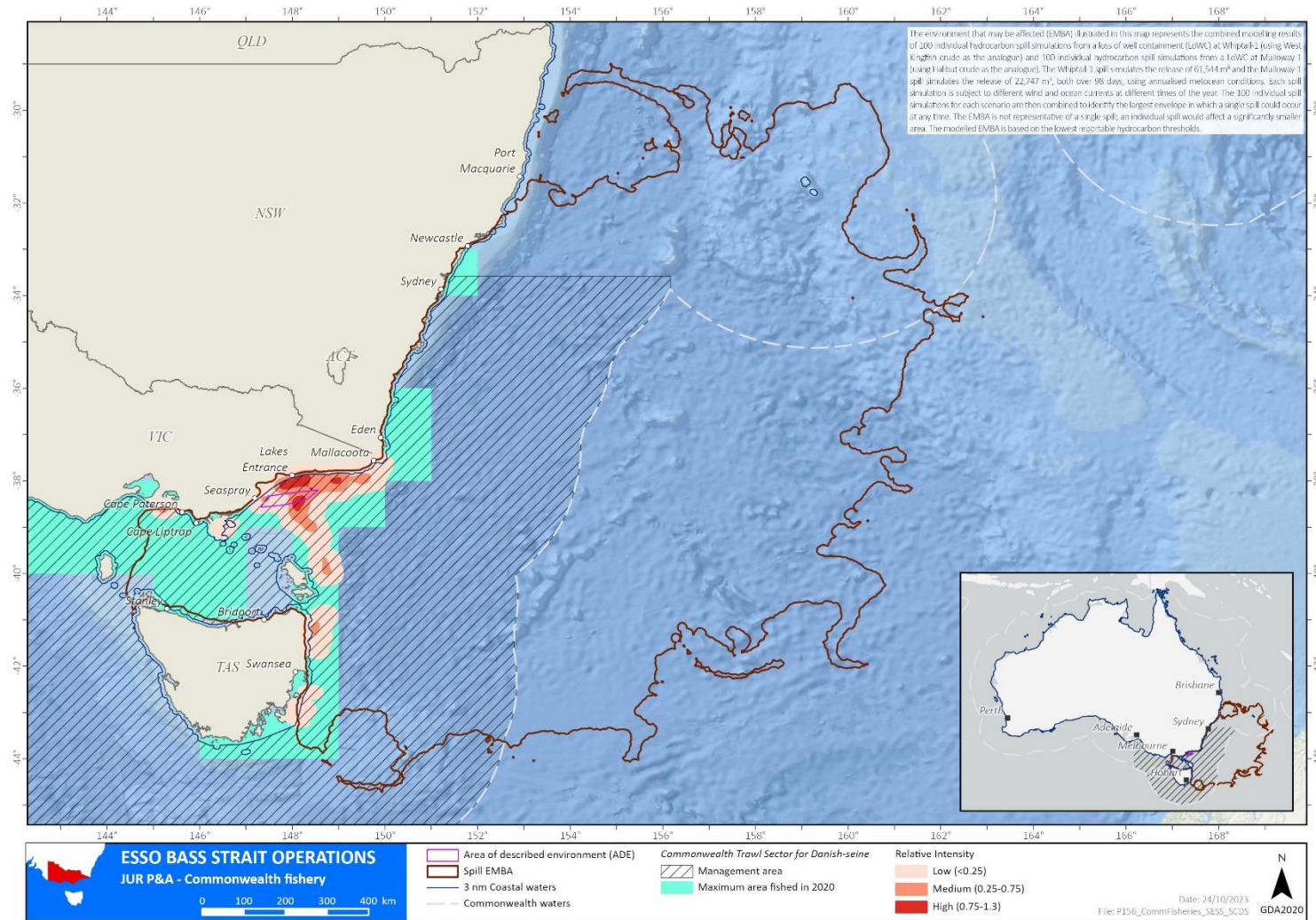


Figure 1-55 SESSF CTS Danish-seine jurisdiction and fishing intensity (2020 season) intersected by the EMBA

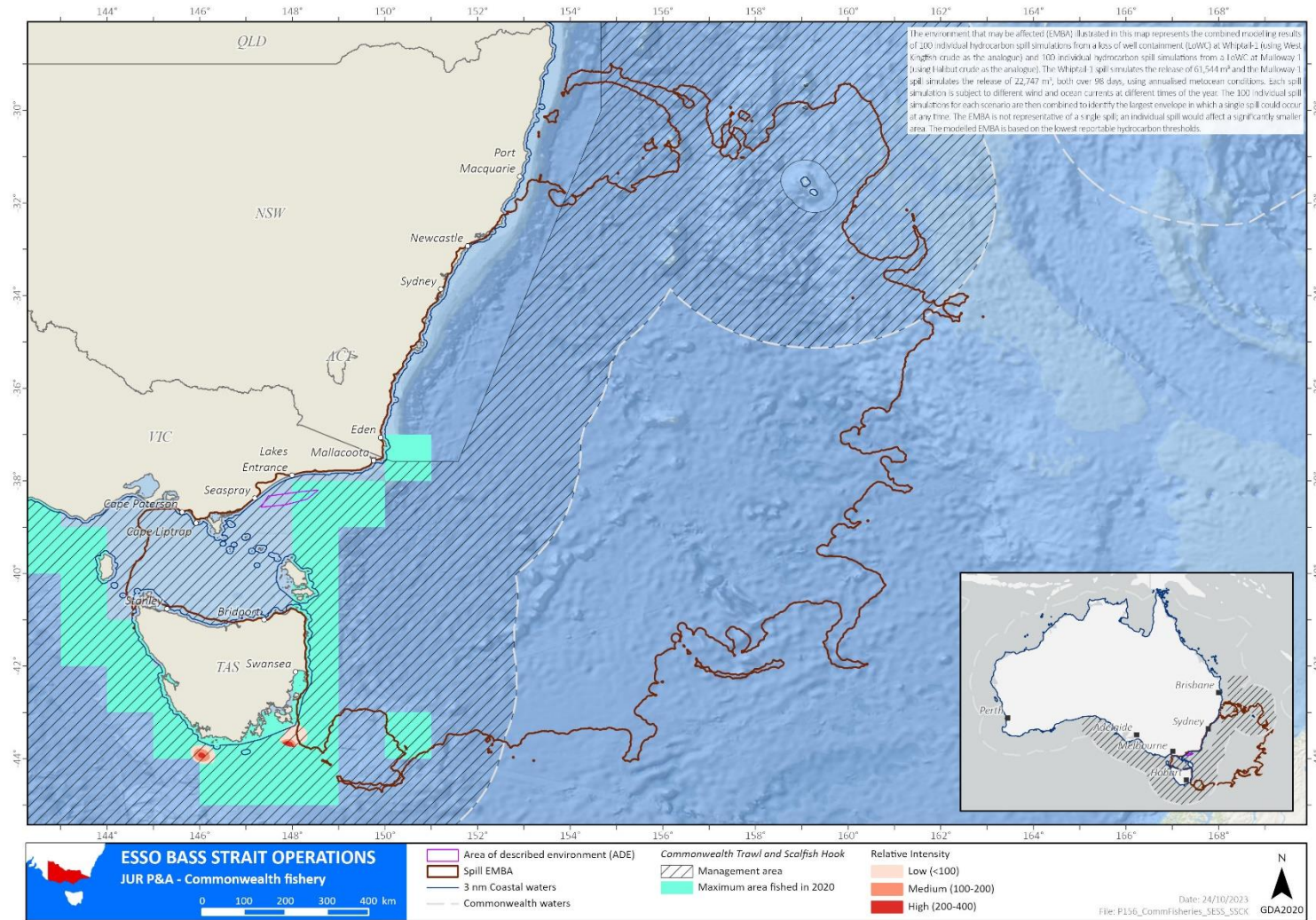


Figure 1-56 SHS jurisdiction and fishing intensity (2020 season) intersected by the EMBA

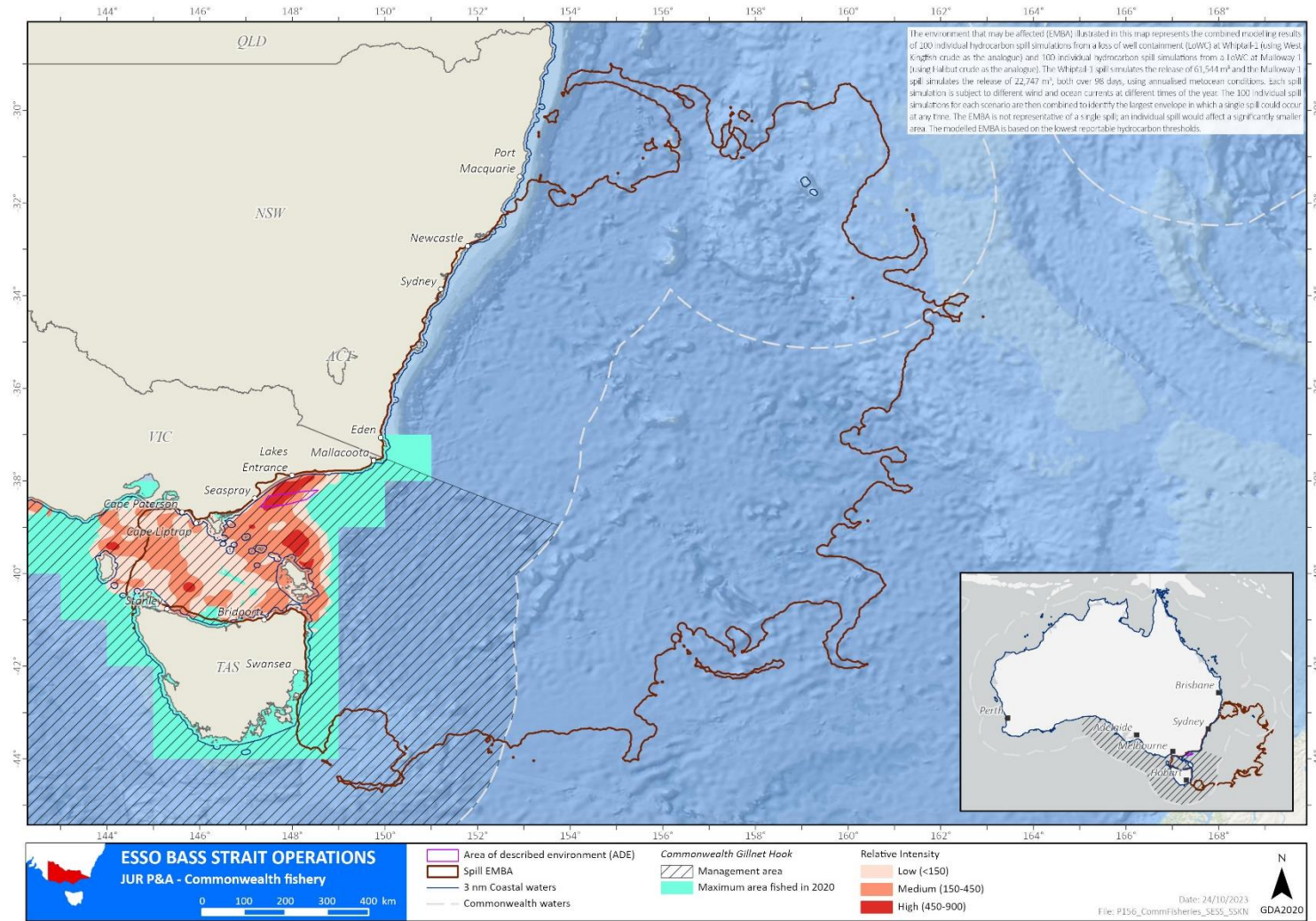


Figure 1-57 SESSF SGSHS gillnet jurisdiction and fishing intensity (2020 season) intersected by the EMBA

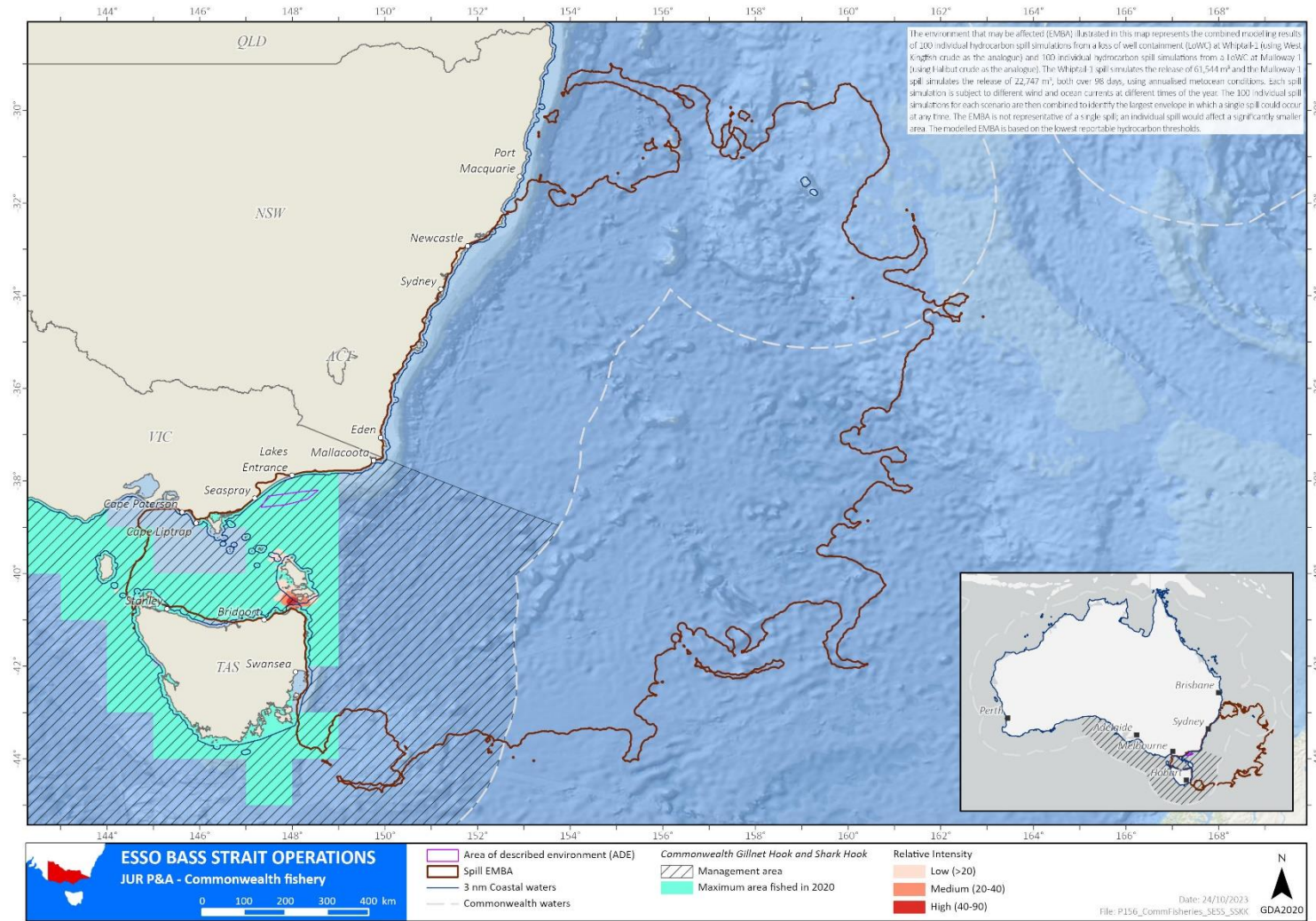


Figure 1-58 SESSF SGSHS hook jurisdiction and fishing intensity (2020 season) intersected by the EMBA

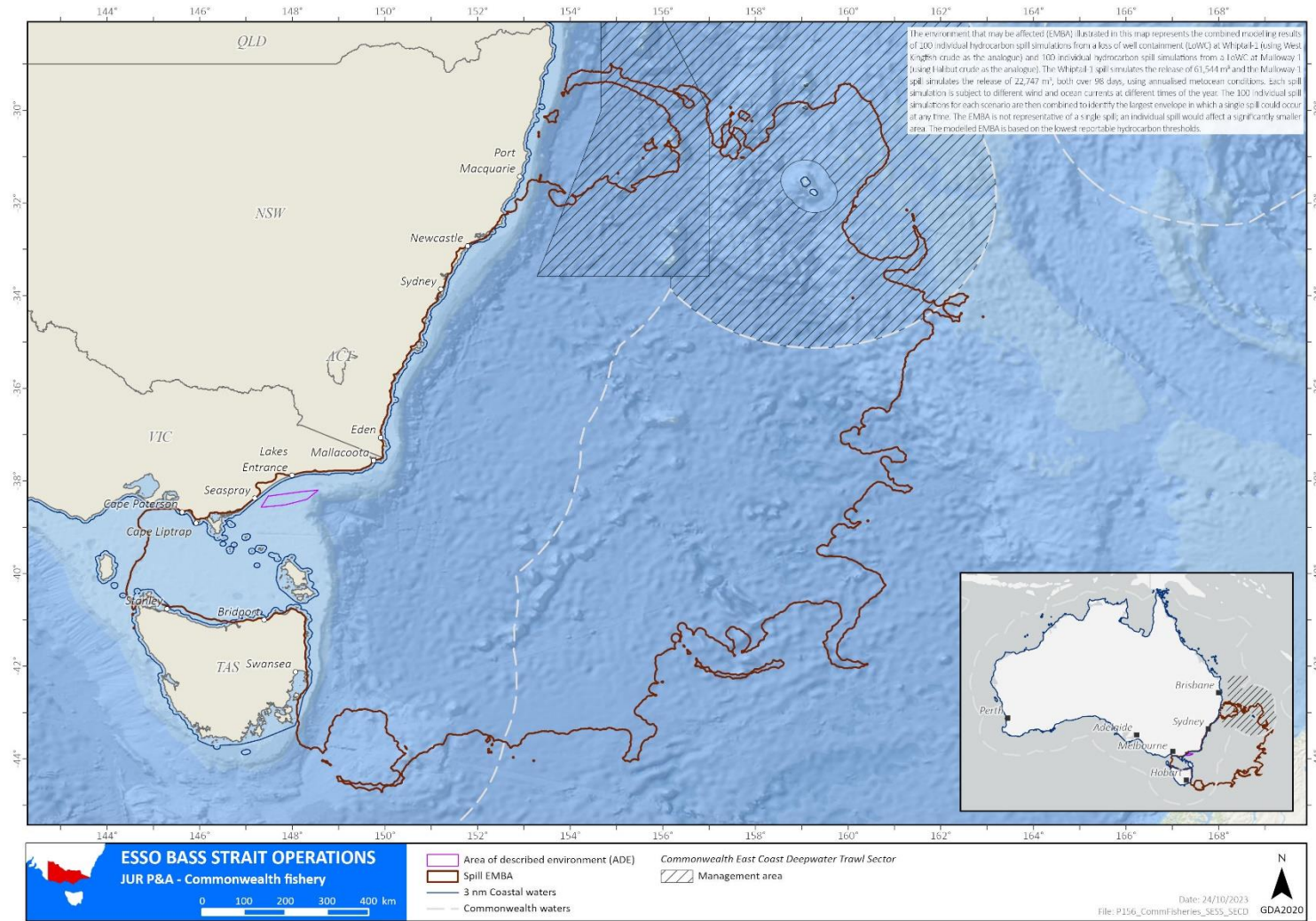


Figure 1-59 SESSF ECDS jurisdiction intersected by the EMBA

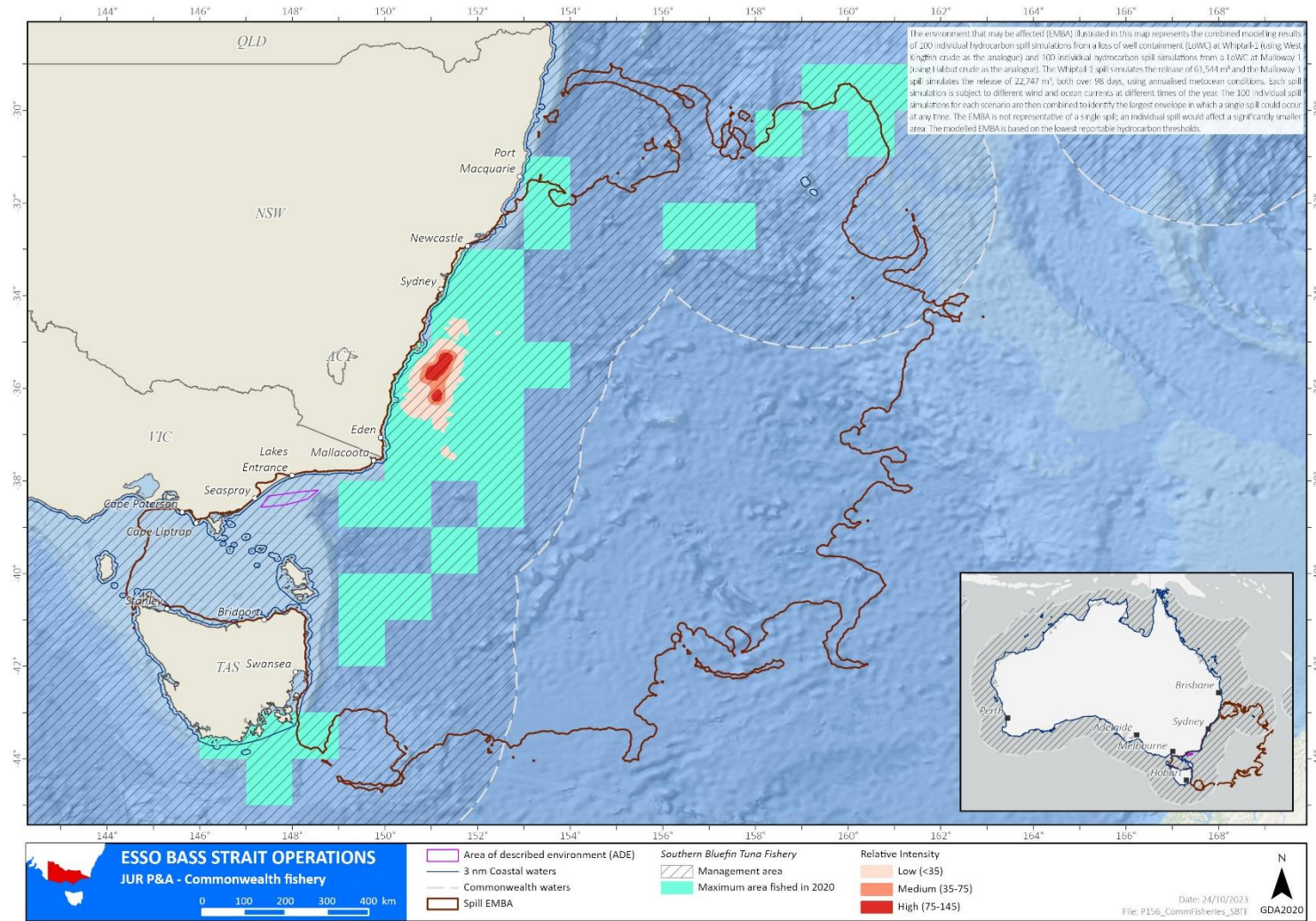


Figure 1-60 SBFTF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

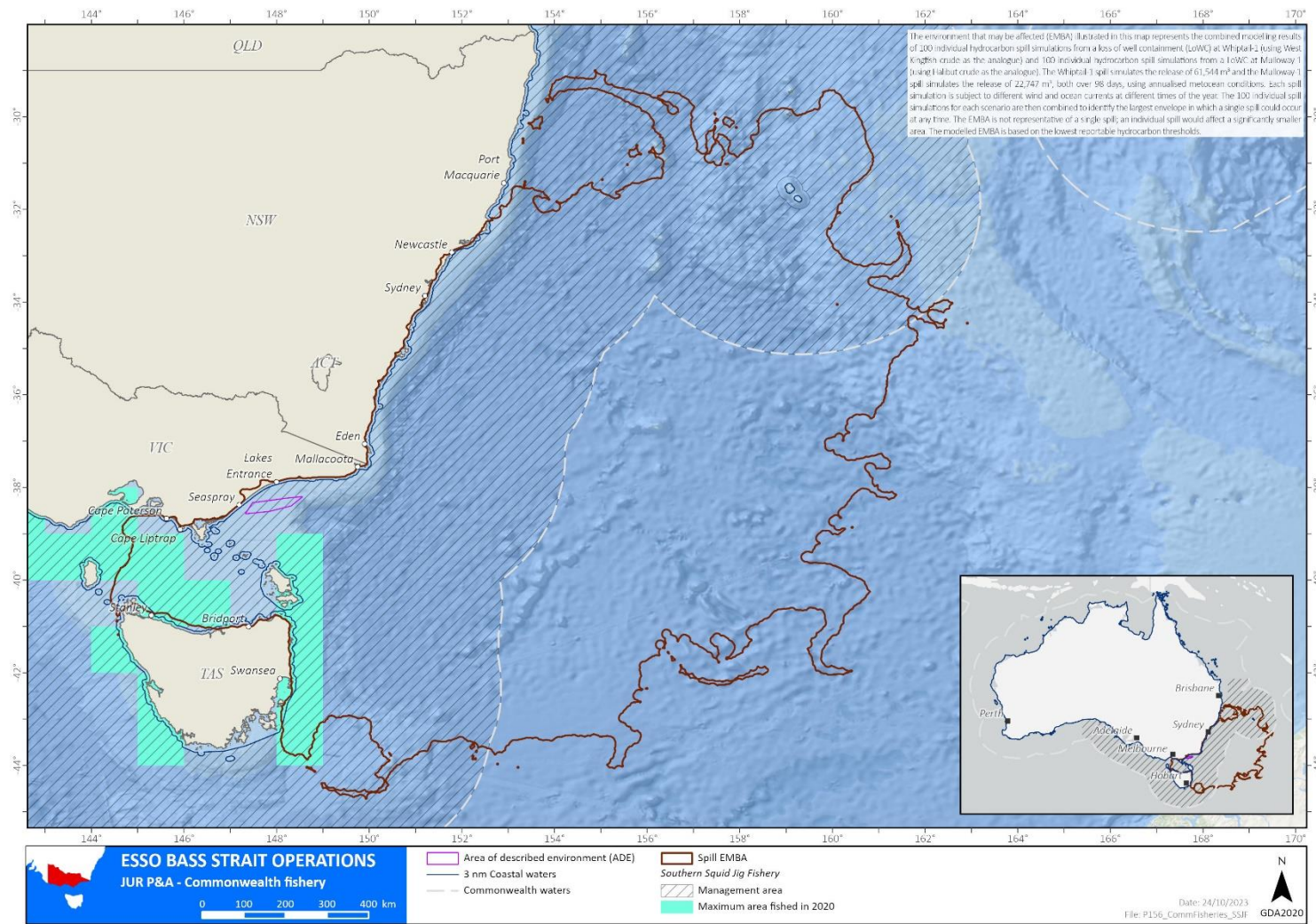


Figure 1-61 SSJF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

1.6.3 Victorian Fisheries

Victorian-managed commercial fisheries with jurisdiction to fish in the waters of the EMBA are described in Table 1-7.

Table 1-7 Victorian managed fisheries within the EMBA

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery (Figure 1-62)	Blacklip abalone (<i>Haliotis rubra</i>) is the primary target, with greenlip abalone (<i>H. laevigata</i>) taken as a bycatch.	The Abalone Fishery is one of Victoria's most valuable commercial fisheries that started in 1962. Almost all catch is exported to international markets, predominately in Asia. Abalone are caught along most of the Victorian coastline. Abalone are collected by divers (generally no greater than 30 m deep) who use an iron bar to prise it from the rocks. The divers can stay under water for long periods by using hookah gear.	51.9%
Eel Fishery	Short-finned eel (<i>Anguilla australis</i>) Long-finned eel (<i>Anguilla reinhardtii</i>)	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.	N/A
Giant Crab Fishery (Figure 1-63)	Giant crabs (<i>pseudocarcinus gigas</i>)	The Giant Crab Fishery is a small, limited entry fishery affiliated with the Rock Lobster Fishery. Fishers target giant crabs using baited rock lobster pots.	51.9%
Pipi Fishery (Figure 1-64)	Pipi (<i>donax deltoides</i>)	The pipi fishery zone covers the entire victorian coastline, excluding the intertidal zone of Port Phillip Bay, MNPs, and sanctuaries where shellfish cannot be harvested. Pipi's are found in habitats with high energy surf areas and sandy beaches. The known areas of harvestable quantities of pipi are beaches in Discovery Bay and surrounds in the west, and in Venus Bay and surrounds in the east.	62.2%
Rock Lobster Fishery (Figure 1-63)	Southern rock lobster (<i>jasus edwardsii</i>)	The fishery is divided into two separately managed zones: Eastern and Western. The Eastern Zone extends west from the NSW border to Apollo Bay; the Western Zone extends from Apollo Bay west to the border with SA. The main ports in the Eastern Zone are Queenscliff, San Remo and Lakes Entrance.	51.9%

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
		The Victorian, the southern rock lobster (<i>Jasus edwardsii</i>). Rock lobster is Victoria’s second most profitable fishery after abalone. Southern Rock Lobsters are found to depths of 150 m, with most of the catch coming from inshore waters less than 100 m deep.	
Scallop Fishery (Figure 1-65)	Commercial scallop (<i>pecten fumatus</i>)	The Victorian scallop fishery extends 20 nm from the high tide water mark of the entire Victorian coastline (excluding bays and inlets where commercial scallop fishing is prohibited). Highest fishing effort is concentrated in the eastern waters of the state, with most vessels launching from Lakes Entrance and Port Welshpool.	56.3%
Octopus Fishery (Figure 1-66)	Primarily Pale octopus (<i>Octopus pallidus</i>) however, Maori octopus (<i>Macroctopus maorum</i>) and Gloomy Octopus (<i>Octopus tetricus</i>) may also be taken.	This fishery is the newest addition to the Victorian fisheries, commencing in 2020. The only area the fishery operates in is the eastern zone extending from Seaspray to the Victorian/NSW border and out to 20 nautical miles offshore, except for marine reserves. Octopus fishing in the central and western zones is less established and is being managed by the VFA through exploratory, temporary permits.	51.9%
Wrasse Fishery (Figure 1-67)	Primary: Bluethroat Wrasse (<i>Notolabrus tetricus</i>) Purple Wrasse (<i>N. fucicola</i>) Other: Rosy Wrasse (<i>Pseudolabrus psittaculus</i>) Senator Wrasse (<i>Pictilabrus laticlavius</i>) Southern	The commercial fishery extends along the entire length of the Victorian coastline and out to 20 nm offshore, except for marine reserves. Most wrasse is harvested by hook and line although commercial rock lobster fishers who also hold a commercial wrasse licence can keep those fish that they catch in their rock lobster pots.	62.0%

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
	Maori Wrasse (<i>Ophthalmolepis lineolatus</i>)		
Sea Urchin Fishery (Figure 1-68)	White sea urchin (<i>Heliocidaris erythrogramma</i>) Black, long-spined sea urchin (<i>Centrostephanus rodgersii</i>)	The sea urchin fishery comprises of four individual management zones. The central zone covers Victorian waters from Hopkins River to Lakes Entrance. The eastern zone extends from Lakes Entrance to the NSW border. The target species are the White sea urchin (<i>Heliocidaris erythrogramma</i>) and the Black, long-spined sea urchin (<i>Centrostephanus rodgersii</i>). The sea urchin is usually collected by hand by divers. Currently, sea urchin will only be harvested in eastern Victoria, primarily out of Mallacoota, and in Port Phillip Bay.	63.5%
Ocean (general) Fishery	A range of fish including salmon, snapper, whiting, trevally, mackerel and gummy shark. As well as calamari and rays.	This fishery jurisdiction is the entire Victorian catch and effort cells, excluding bays and inlets. Haul seine gears, multi-filament mesh nets, non-shark monofilament mesh nets, hand lines, hand squid jigs, longlines, drop lines and troll lines are all used.	62%
Trawl (inshore)	A range of fish species including flathead, whiting and mackerel as well as eastern king prawns, eastern school pawns, bug, sand crab and octopus.	This fishery jurisdiction is also the entire Victorian catch and effort grids, excluding bays and inlets. Trawling is the primary fishing method used.	62%

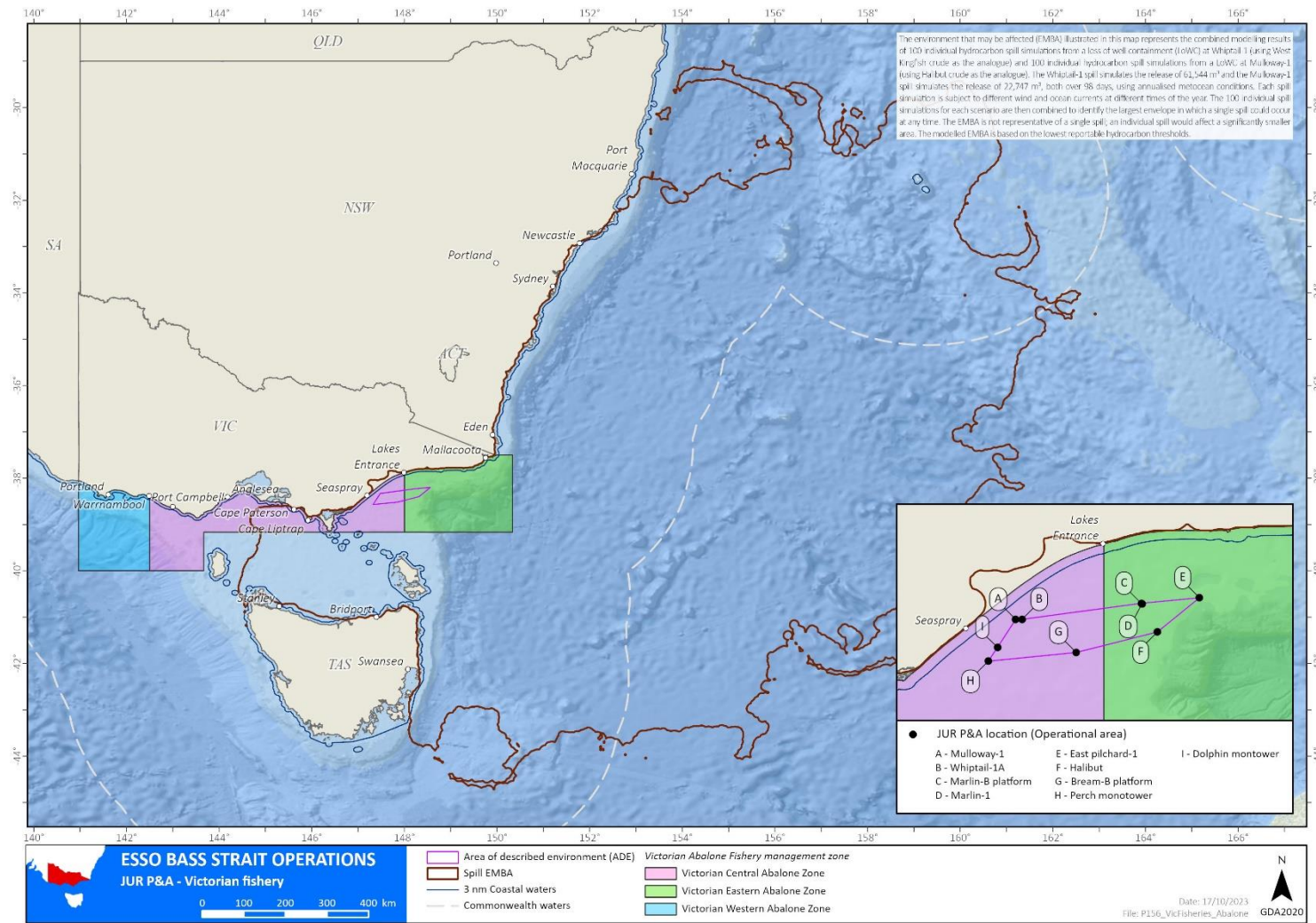


Figure 1-62 Victorian abalone fishery jurisdiction intersected by the EMBA

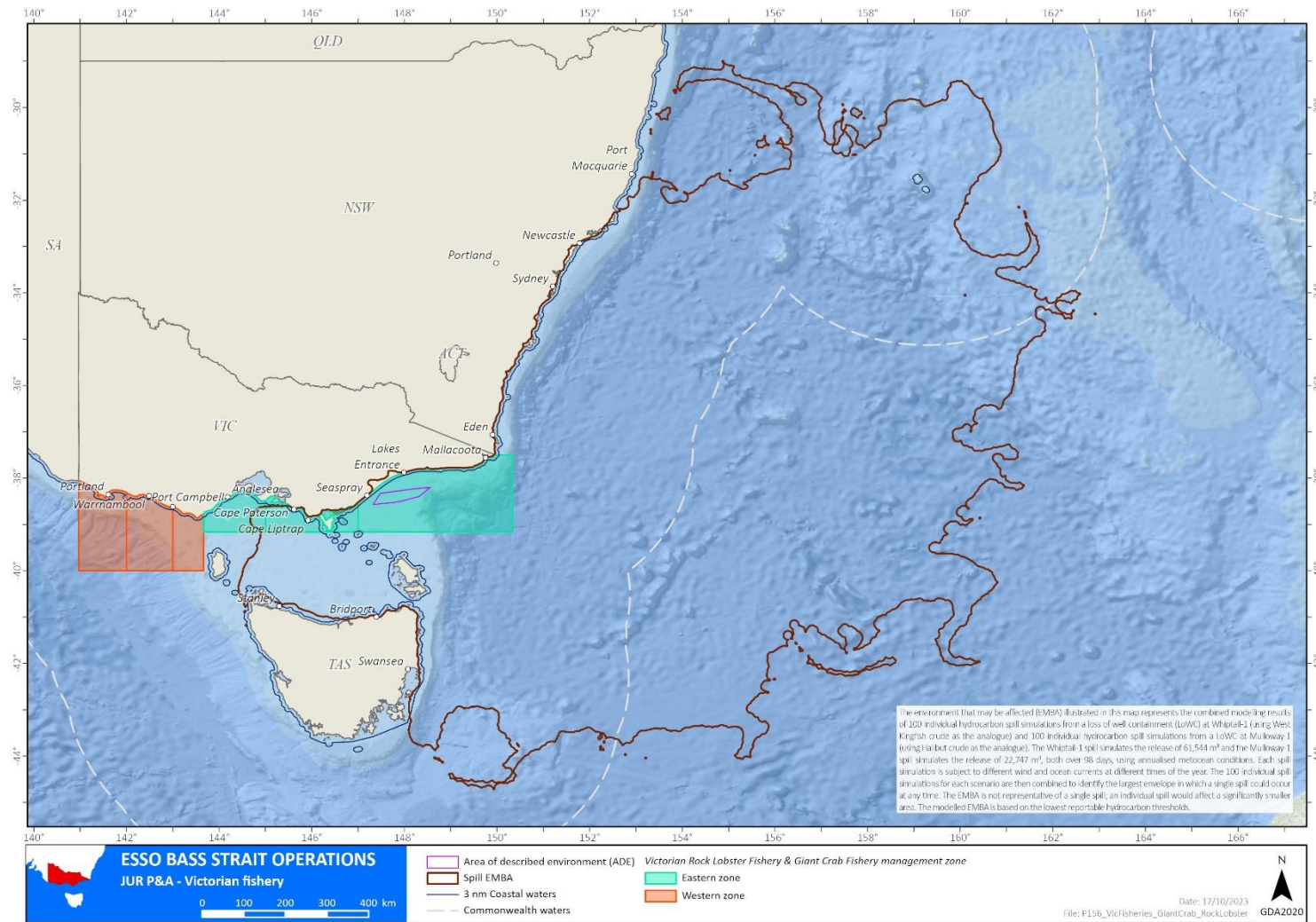


Figure 1-63 Victorian rock lobster and giant crab fishery jurisdiction intersected by the EMBA

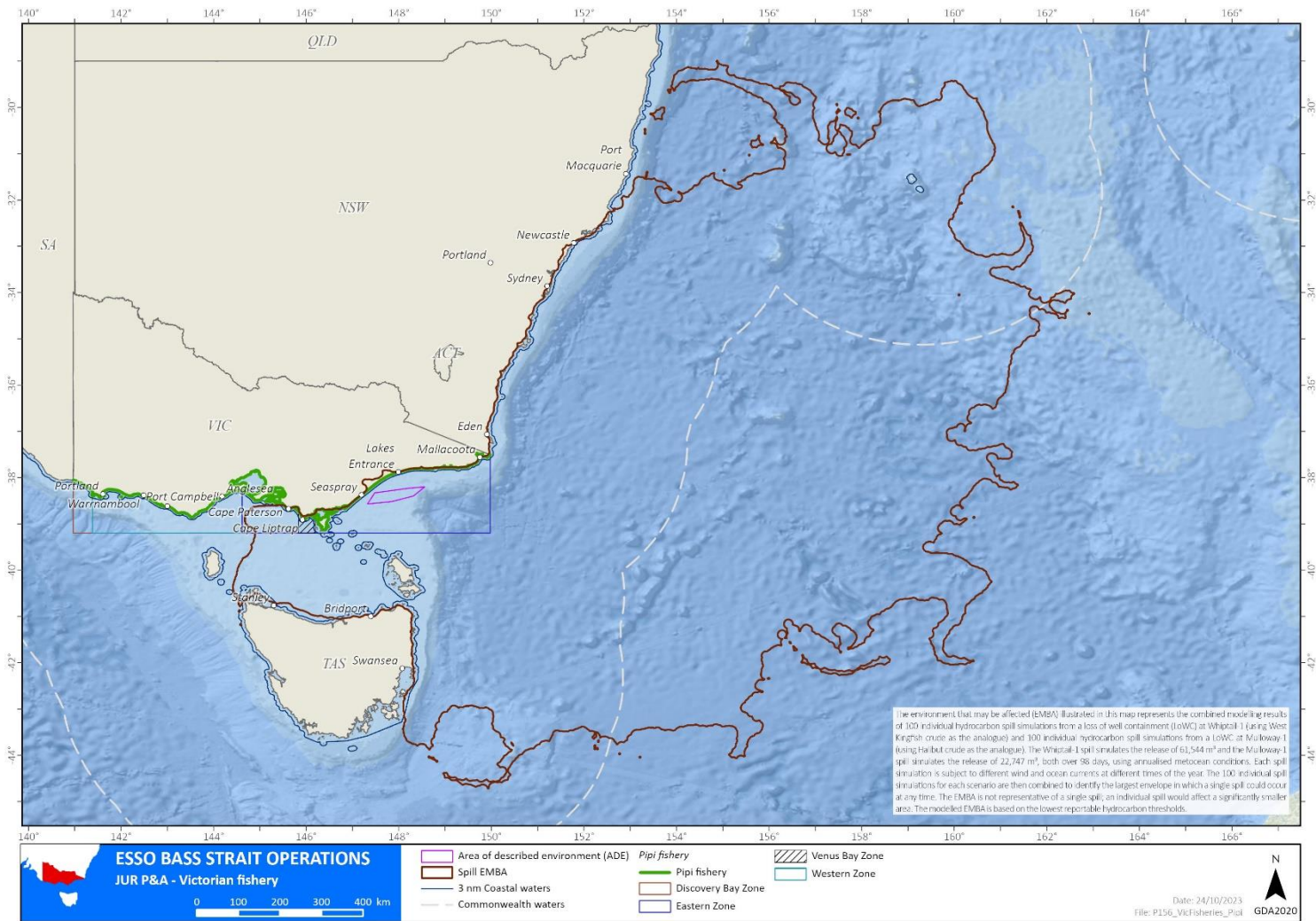


Figure 1-64 Victorian pipi fishery jurisdiction intersected by the EMBA

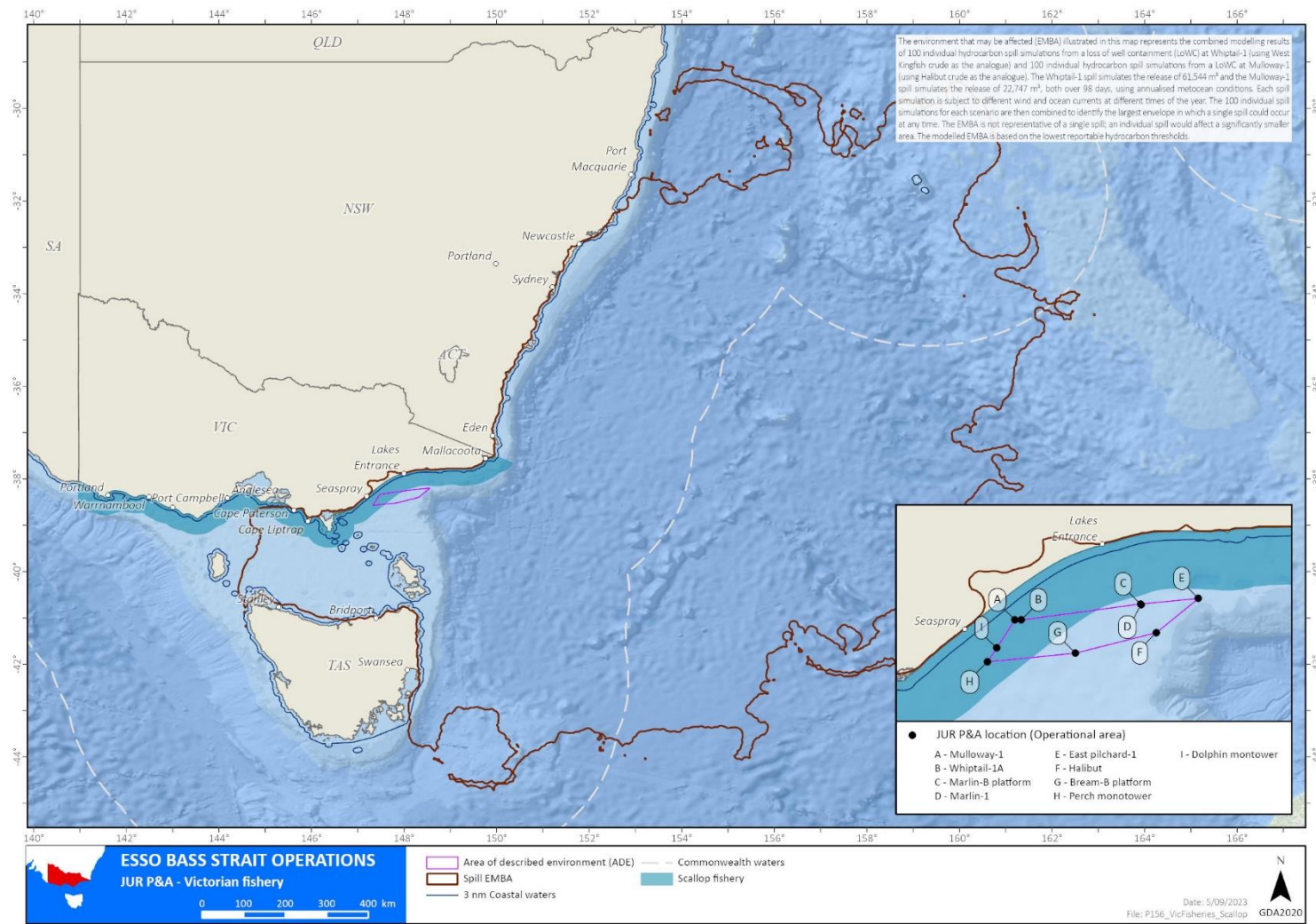


Figure 1-65 Victorian scallop fishery jurisdiction intersected by the EMBA

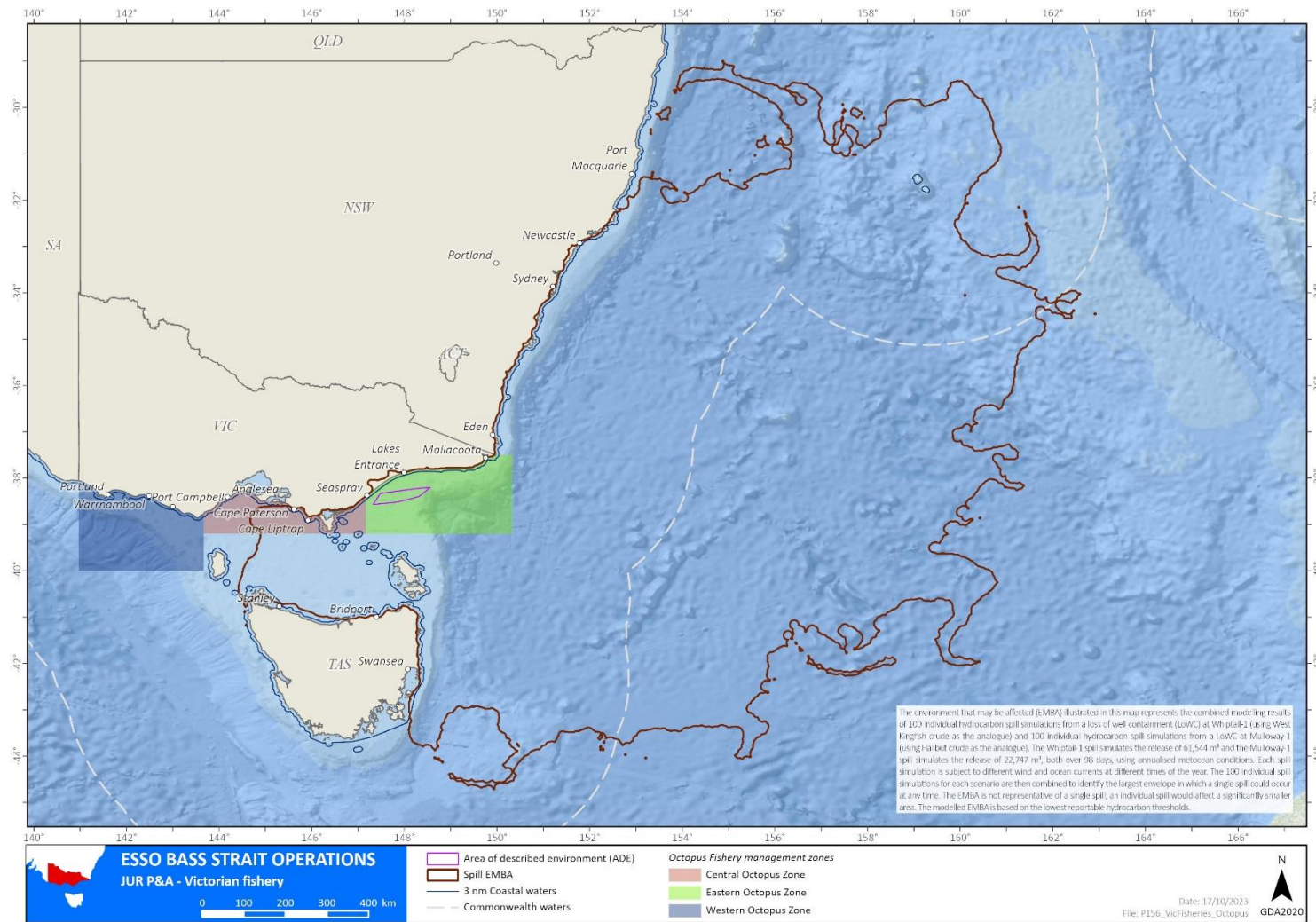


Figure 1-66 Victorian octopus fishery jurisdiction intersected by the EMBA

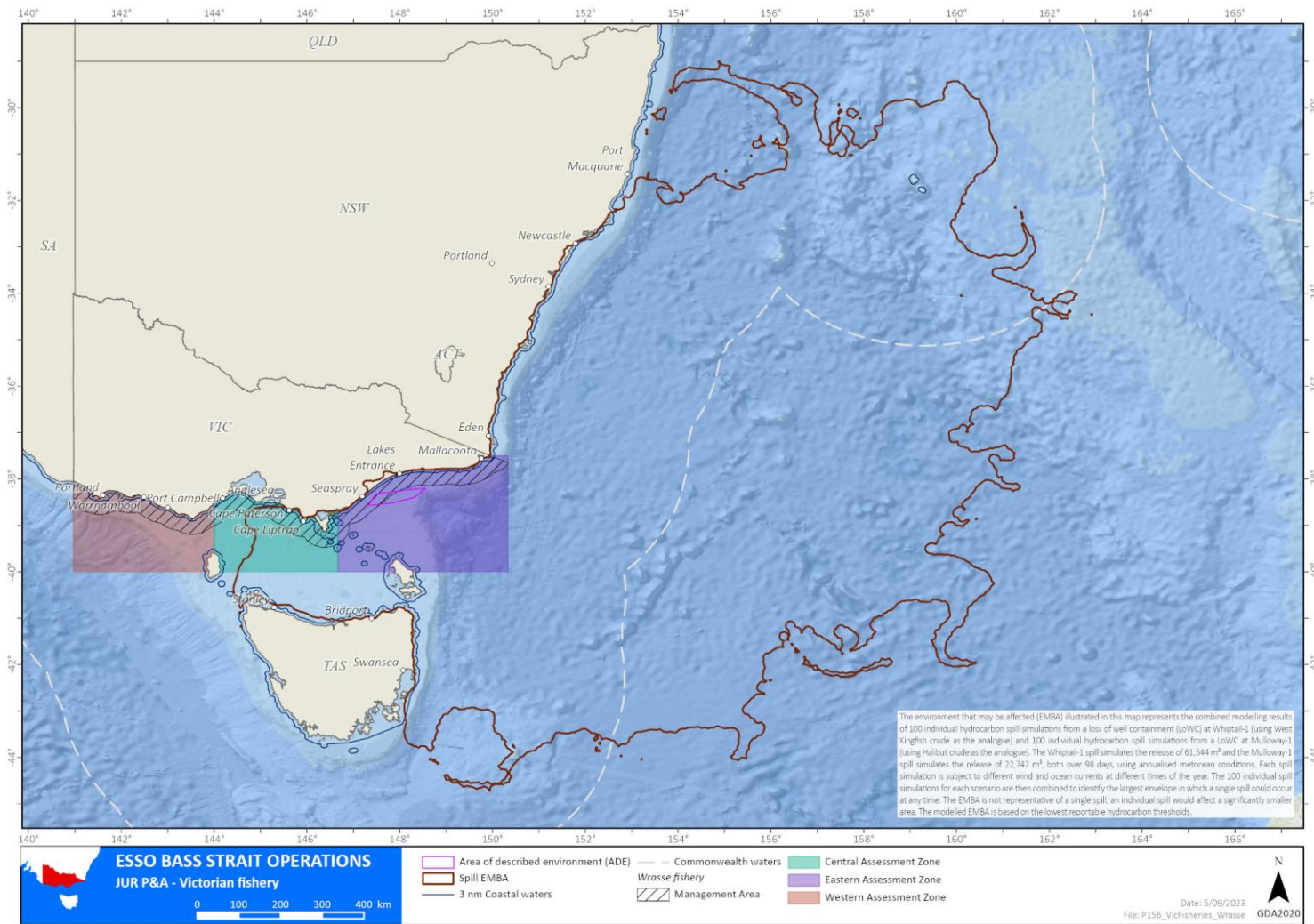


Figure 1-67 Victorian wrasse fishery jurisdiction intersected by the EMBA

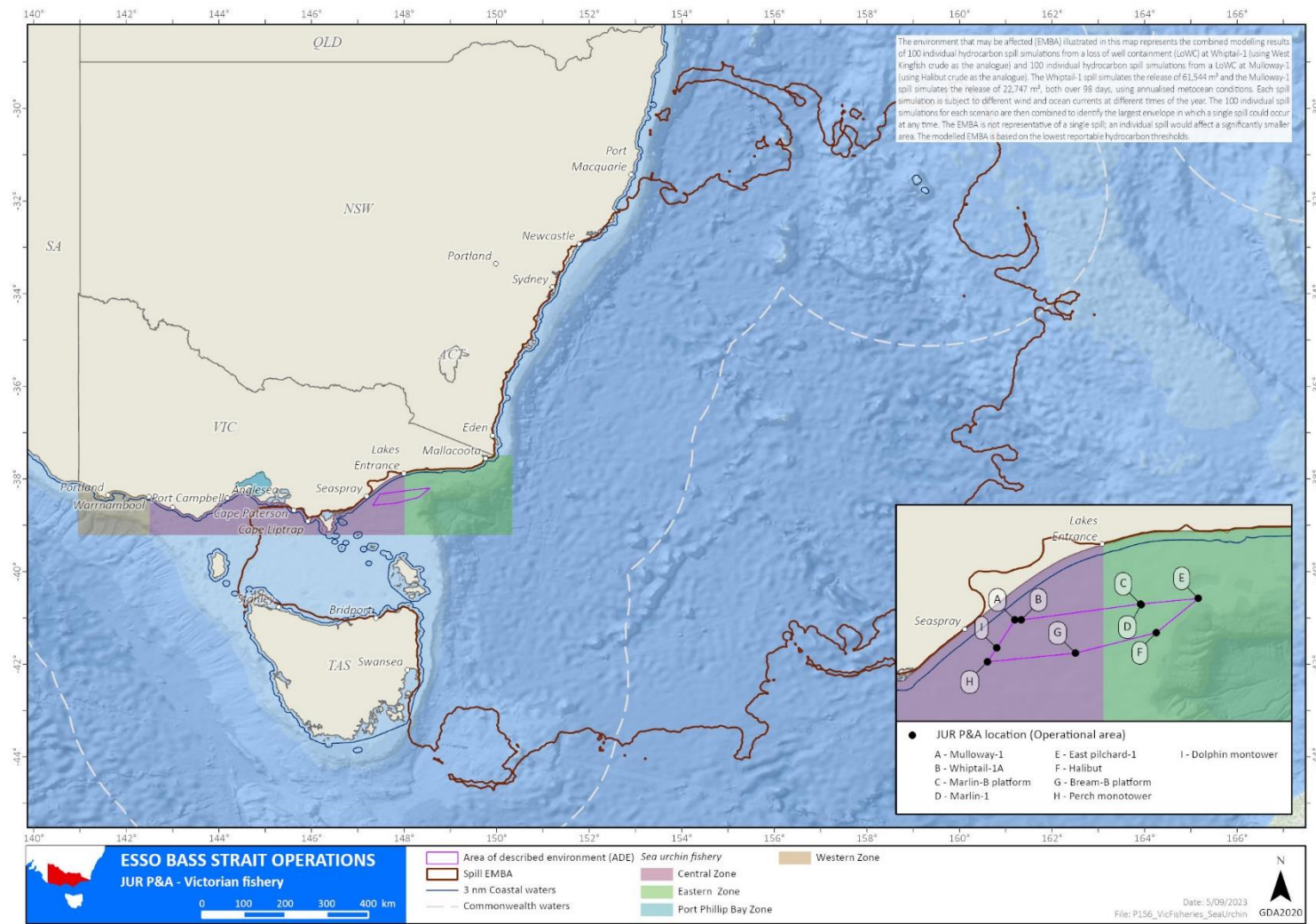


Figure 1-68 Victorian sea urchin fishery jurisdiction intersected by the EMBA

1.6.4 *Tasmanian Fisheries*

Tasmanian-managed commercial fisheries with jurisdiction to fish in the waters of the EMBA are described in Table 1-8.

Table 1-8 Tasmanian managed fisheries within the EMBA

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery (Figure 1-69)	Blacklip abalone (<i>Haliotis rubra</i>), (<i>H. laevisgata</i>)	<p>The Tasmanian abalone fishery is the largest wild abalone fishery in the world and the fishery area surrounds the entire island of Tasmania extending northwards into Bass Strait to include Bass Strait islands such as the Furneaux Group.</p> <p>The Tasmanian wild harvest abalone fishery for Blacklip (<i>H. rubra</i>) and Greenlip (<i>H. laevisgata</i>) produces 25% of the total annual global production of wild caught abalone and is harvested by divers. Annual catch limits are set by the government and the limits are spread across the fishing zones to manage resource sustainability. This system includes closures of some parts of the fishery as published by the Tasmanian regulator Department of Primary Industries, Parks, Water & Environment (DPIPWE, 2019a).</p>	40.7%
Scalefish (Figure 1-70)	Wrasse Banded morwong (<i>Cheilodactylus spectabilis</i>) Southern calamari (<i>Sepioteuthis australis</i>)	<p>The Tasmanian Scalefish Fishery is a multi-species and multi-gear fishery that is predominantly made up of small owner operated commercial businesses and a large and diverse recreational fishery. Some of the species commercially targeted include: banded morwong, southern calamari, octopus, tiger flathead, school whiting, southern garfish, wrasse, Gould's squid, bastard trumpeter, blue warehou, silver warehou, flounder, silver trevally and striped trumpeter.</p> <p>The main gear types include gillnet, hooks and seine nets, other fishing gears in use include traps, Danish seine, dip nets and spears. For many commercial operators, scalefish represent an adjunct to other activities, for instance rock lobster fishing (DPIPWE, 2019b).</p>	40.9%
Rock Lobster (Figure 1-71)	Southern rock lobster (<i>Jasus edwardsii</i>)	<p>The rock lobster fishery is a major Tasmanian industry providing significant benefits from exports from the commercial fishery. The Southern rock lobster (<i>Jasus edwardsii</i>) commonly known as crayfish, lives in a variety of habitats ranging from shallow rocky inshore pools out to the continental shelf. Pots are used as the catch method and over 300 licences issued each year.</p> <p>The fishery is managed by quota management, supplemented by size limits, gear restrictions and seasonal closures (DPIPWE, 2019c).</p>	35.3%

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
Giant Crab Fishery (Figure 1-71)	Giant crabs (<i>pseudocarcinus gigas</i>)	The Giant Crab (<i>Pseudocarcinus gigas</i>) fishery is a comparatively small fishery with annual harvest set at 46.6 tonnes, but is of relatively high value, with the landed valued estimated to be around \$2 million. The Tasmanian Giant Crab fishery is managed by limited entry, setting a total annual commercial catch and by an individual transferable quota management system. This regime is supplemented by size limits, gear restrictions and seasonal closures. The permitted gear types are pot (or trap) for the commercial fishery (E Ogier, 2018).	35.3%
Scallop (Figure 1-71)	Commercial Scallop (<i>Pecten fumatus</i>)	This fishery targets Commercial Scallop (<i>Pecten fumatus</i>) using a scallop harvester (dredge). Although commercial fishers can legally take the doughboy scallop and the queen scallop, these species have only minor commercial significance in Tasmania. Pre-season surveys are carried out to determine which areas meet predetermined criteria and can be opened for scallop fishing. The market for commercial harvested scallops is largely domestic. Scallop beds occur on the shelf in water deeper than 20 m (E Ogier, 2018).	35.3%
Commercial Dive (Figure 1-72)	shortspined sea urchin (<i>Heliocidaris erythrogramma</i>) wavy periwinkles (<i>Lunella undulata</i>) and longspined sea urchin (<i>Centrostephanus rodgersii</i>).	The fishery targets three key species by hand from small vessels. The shortspined sea urchin (<i>Heliocidaris erythrogramma</i>) and wavy periwinkles (<i>Lunella undulata</i>) and the longspined sea urchin (<i>Centrostephanus rodgersii</i>). It operates entirely in state waters in five separate management zones (central eastern, southeastern, northeastern, northern and eastern) (DNRET, Commercial Dive Fishery, 2023a).	40.7%
Shellfish Fishery (Figure 1-73)	clams (<i>Veneruptis largillierti</i>), native oyster (<i>Ostrea angasi</i>), cockles (<i>Katelysia scalarina</i>) and wild Pacific	The commercial shellfish fishery includes clams (<i>Veneruptis largillierti</i>) for which there are three licences restricted to Georges Bay, native oyster (<i>Ostrea angasi</i>) for which there are two licences restricted to Georges Bay and wild Pacific oyster (<i>Crassostrea gigas</i>) (DNRET, 2023b). Temperate climate bivalves generally have two spawning periods within a year following spring and autumnal peaks in phytoplankton production.	31.6%

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
	oyster (<i>Crassostrea gigas</i>)		
Marine Plant Fishery	Wakame (<i>Undaria pinnatifida</i>) Bull kelp (<i>Durvillaea potatorum</i>)	The only marine plant that can be harvested directly from the water is <i>Undaria</i> , a noxious pest species. This fishery is managed under limited introduced marine plant fishing licenses to mitigate the risk of spreading. Other marine plants that have been cast onshore, such as bull kelp, can be collected with a commercial beach-cast harvest license.	N/A



Figure 1-69 Tasmanian abalone fishery jurisdiction intersected by the EMBA

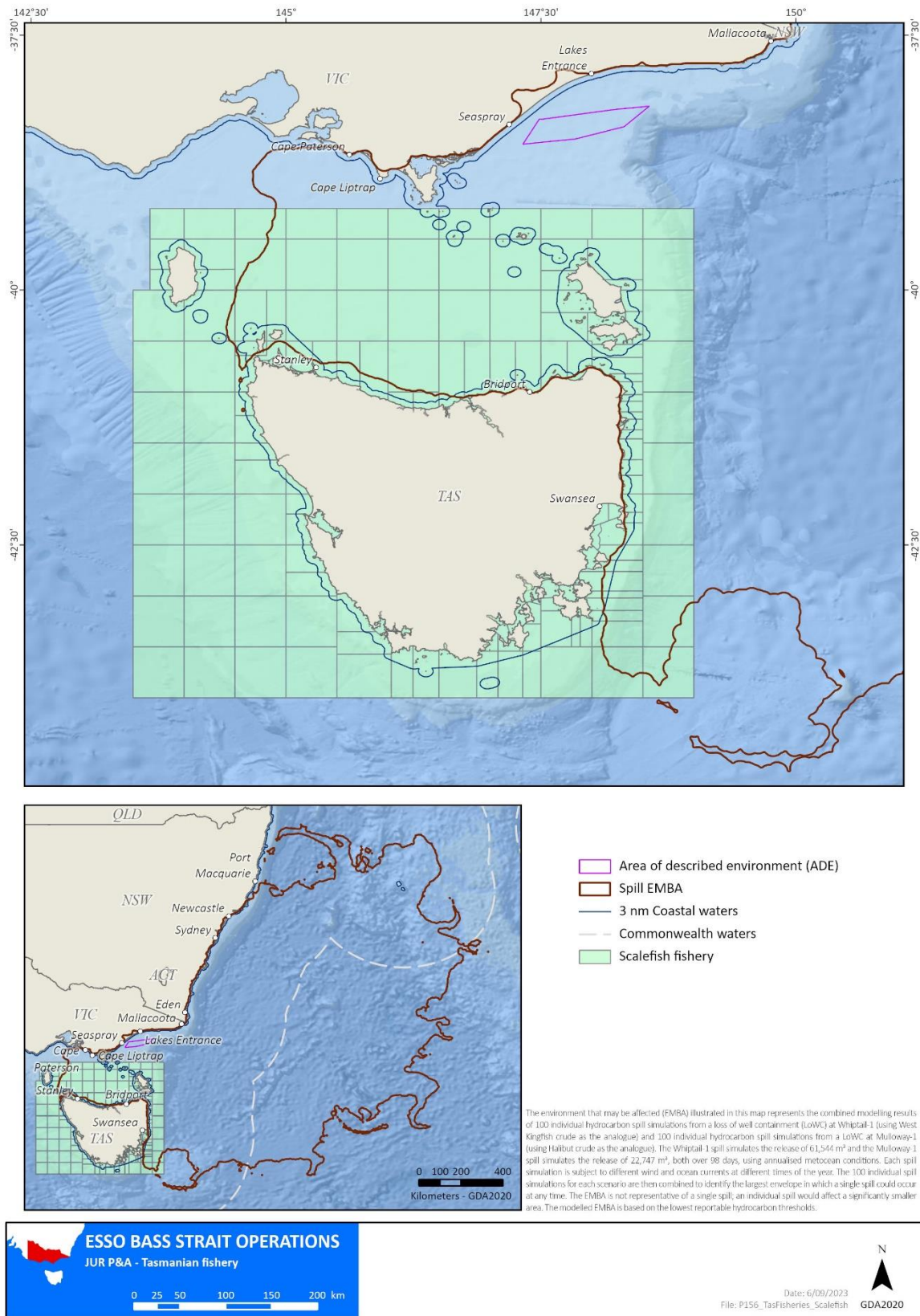


Figure 1-70 Tasmanian scalefish fishery jurisdiction intersected by the EMBA

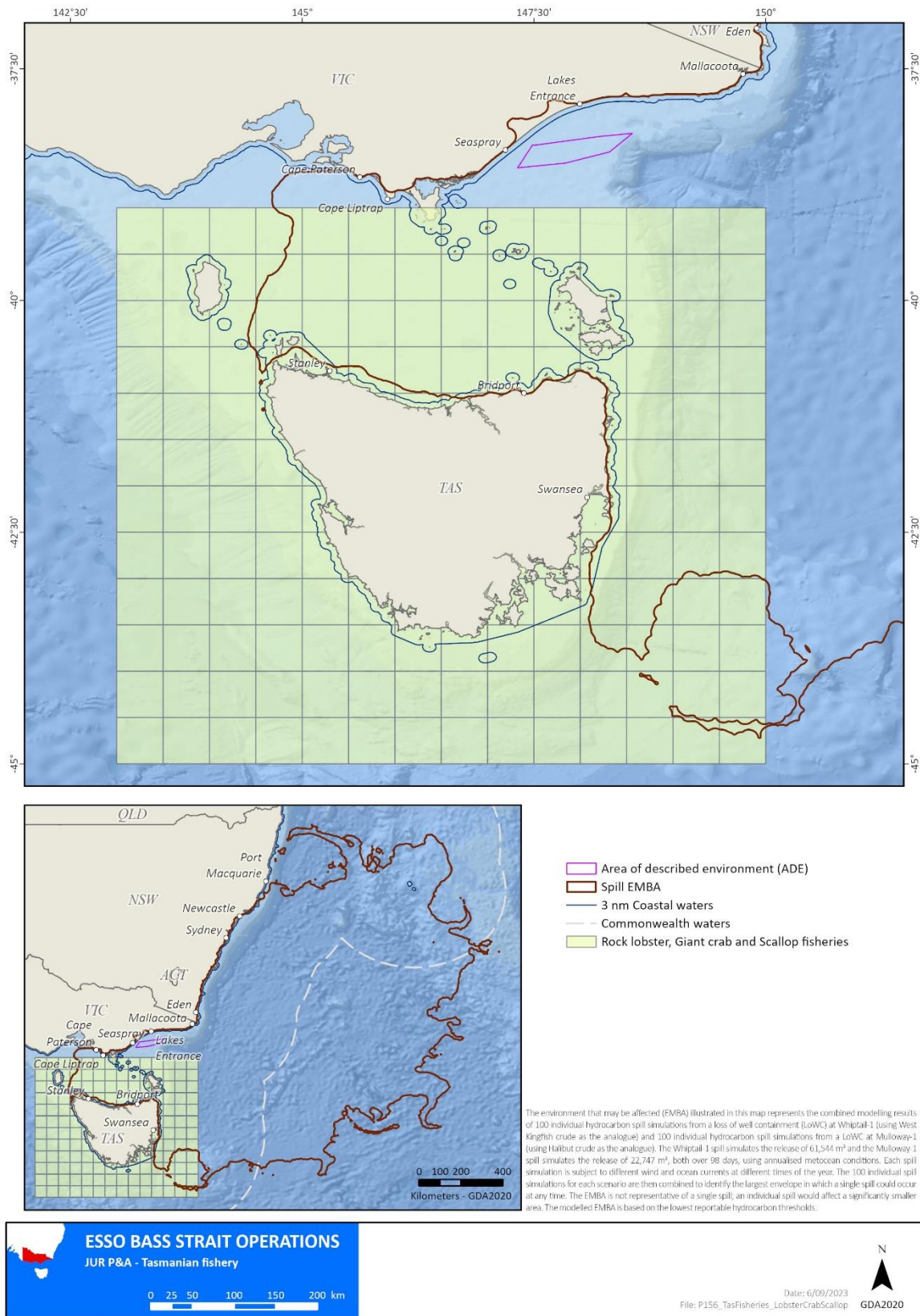


Figure 1-71 Rock lobster, giant crab and scallop fishery jurisdiction intersected by the EMBA

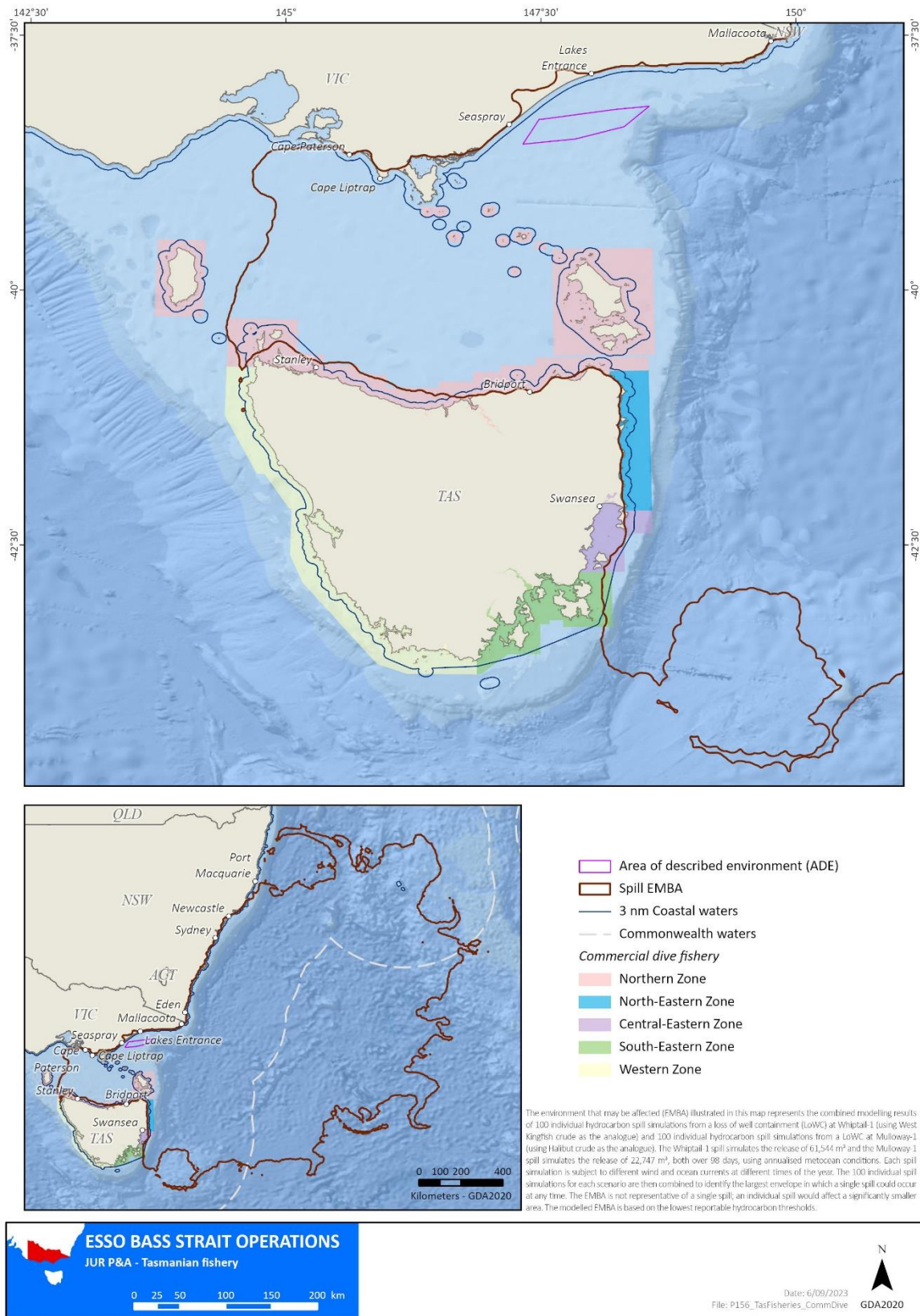


Figure 1-72 Tasmanian commercial dive fishery jurisdiction intersected by the EMBA

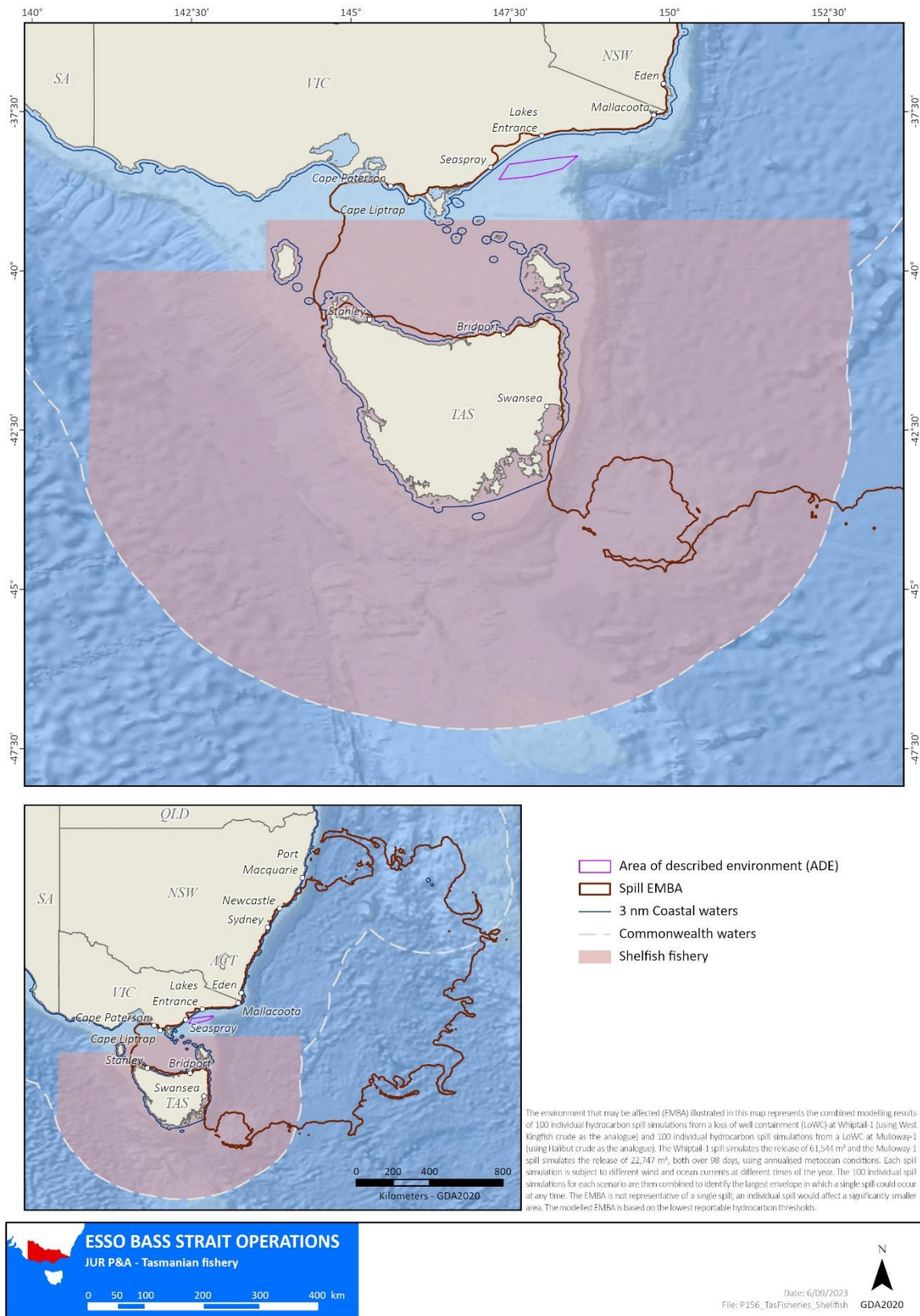


Figure 1-73 Tasmanian shellfish fishery jurisdiction intersected by the EMBA

1.6.5 New South Wales Fisheries

New South Wales managed commercial fisheries with jurisdiction to fish in the waters of the EMBA are described in Table 1-9. Please note that the NSW fisheries does not have data publicly available, therefore mapping and percentage overlaps cannot be attained.

Table 1-9 NSW managed fisheries within the EMBA

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
Abalone Fishery	Blacklip abalone (<i>Haliotis rubra</i>)	The blacklip abalone forms the basis of the abalone fishery in NSW. Abalone are commercially harvested 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, with most abalone found close to the shore.	N/A – data unavailable.
Estuary General Fishery	Sea Mullet (<i>Mugil cephalus</i>) Luderick (<i>Girella tricuspidata</i>) Yellowfin bream (<i>Acanthopagrus australis</i>) School Prawn (<i>Metapenaeus macleayi</i>) Blue Swimmer Crab (<i>Portunus pelagicus</i>) Dusky Flathead (<i>Platycephalus fuscus</i>) Sand Whiting (<i>Sillago ciliata</i>) Pipi (<i>Donax deltooides</i>) Mud Crab (<i>Scylla serrata</i>) Silver Bidy (<i>Gerres subfasciatus</i>).	The Estuary General Fishery is a diverse multi-species multi-method fishery that may operate in 76 of the NSW's estuarine systems. This fishery is a significant contributor to regional and state economies providing high quality seafood and bait to the community. The fishery includes all forms of commercial estuarine fishing (other than estuary prawn trawling) in addition to the gathering of pipis and beachworms from ocean beaches. The most frequently used fishing methods are mesh and haul netting. Other methods used include trapping, hand-lining and hand-gathering. Sea mullet, luderick, yellowfin bream, school prawn, blue swimmer crab, dusky flathead, sand whiting, pipi, mud crab and silver bidy make up over 80% of the catch (DPI 2014).	N/A – data unavailable.
Estuary Prawn Trawl Fishery	School Prawns (<i>Metapenaeus macleaya</i>), Eastern King Prawns (<i>Melicertus plebeju</i>).	The fishery uses otter trawl nets in three estuaries in NSW, (the Clarence, Hawkesbury and Hunter Rivers). 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.	N/A – data unavailable.

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
		The majority of prawn catches are landed during the 'dark' of the moon, on either run out or 'slack' tides.	
Lobster Fishery	Primary: Eastern rock lobster (<i>Sagmaraisus verreauxi</i>). Other: Southern Rock Lobster (<i>Jasus edwardsii</i>) Tropical Rock Lobster (<i>Panulirus longipes</i> and <i>P. ornatus</i>).	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. It is characterised by inshore and offshore sectors. Inshore fishers use small beehive or square traps in waters up to 10 m in depth, whilst offshore fishers use large rectangular traps.	N/A – data unavailable.
Ocean Hauling Fishery	Pilchards (<i>Sardinops sagax</i>) Sea Mullet (<i>Mugil cephalus</i>) Australian Salmon (<i>Arripis trutta</i>) Blue Mackerel (<i>Scomber australasicus</i>) Yellowtail Scad (<i>Trachurus novaezelandiae</i>) Yellowfin Bream (<i>Acanthopagrus australis</i>)	The Ocean Hauling Fishery is broken up into seven 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 nautical miles of the coast.	N/A – data unavailable.
Ocean Trap and Line Fishery	Primary: Snapper (<i>Pagrus auratus</i>), Yellowtail kingfish (<i>Seriola lalandi</i>), Leatherjackets (<i>Oligoplites saurus</i>), Bonito (<i>Gymnosarda unicolor</i>) Silver trevally (<i>Pseudocaranx georgianus</i>). Other: Rubberlip (grey) Morwong, Blue-eye Trevalla,	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. 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.	N/A – data unavailable.

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
	Sharks, Bar Cod, Yellowfin Bream, Spanner Crabs		
Ocean Trawl Fishery	<p>Primary: Eastern king prawn (<i>Melicertus plebejus</i>), Eastern school prawn (<i>Metapenaeus macleaya</i>), Royal red prawn (<i>Haliporoides sibogae</i>), Balmain bug (<i>Ibacus spp.</i>), Octopus spp.</p> <p>Various (<i>octopodidae</i>), Cuttlefish (<i>Sepia spp</i>), Southern calamari (<i>Sepioteuthis australis</i>), Eastern school whiting (<i>Sillago flindersi</i>), Stout whiting (<i>Sillago robusta</i>), Tiger flathead (<i>Platycephalus richardsoni</i>), Bluespotted flathead (<i>Platycephalus caeruleopunctatus</i>), Silver trevally (<i>Pseudocaranx georgianus</i>), Eastern shovelnose ray (<i>Aptychotrema rostrata</i>).</p> <p>Secondary: Blue swimmer crab (<i>Portunus armatus</i>), Squid spp. various (Class: <i>cephalopoda</i>) Gurnard/Latchet (<i>Pterygotrigla andertoni</i>, <i>Pterygotrigla</i></p>	<p>There are two sectors to the Ocean Trawl Fishery: the prawn trawl sector and the fish trawl sector. 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.</p>	N/A – data unavailable.

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
	<p><i>polyommata</i>, <i>Chelidonichthys kumu</i>), John dory (<i>Zeus faber</i>) Angel shark (<i>Squatina spp</i>), Flounder spp various (<i>Pleuronectidae/Bothidae</i>), Red mullet various (<i>Mullidae</i>), Redfish (<i>Centroberyx affinis</i>), Leatherjacket spp. various (<i>Monocanthidae</i>), Ocean perch (<i>Helicolenus barathri</i>, <i>Helicolenus percoides</i>), Mirror dory (<i>Zenopsis nebulosus</i>) Sole spp. various (<i>Soleidae</i>), Grey morwong (<i>Nemadactylus douglasii</i>), Pink tilefish (<i>Branchiostegus wardi</i>), Giant boarfish (<i>Paristiopterus labiosus</i>), Shark spp. various</p>		
Sea Urchin and Turban Shell Restricted Fishery	Sea urchin (<i>Echinometridae</i>), Turban shell (<i>Turbinidae</i>)	The NSW Sea Urchin and Turban Shell restricted fishery is relatively small with few divers participating. The main constraint on development is high processing costs and limited domestic markets. Fishing for sea urchins is generally constrained to that part of the year when the roe is well developed. A number of the fishing sub regions have been closed to commercial fishing since 1994.	N/A – data unavailable.

1.6.6 Commercial aquaculture

The Sydney rock oyster (*Saccostrea glomerata*) is the main species grown in NSW. Commercial production in the State occurs in 41 estuaries between Eden in the south to the Tweed River in the north. Wallis Lake and the Hawkesbury River are the main producing areas.

The Sydney rock oyster industry in NSW is largely dependent on natural spawning. The first spawning of a Sydney rock oyster is usually as a male and subsequent spawnings as a female. During spawning, adult females disperse up to 20 million eggs and males hundreds of millions of sperms into the water when the tide and current are optimal for the widest distribution. Fertilisation takes place in the water column and development continues for up to 3 to 4 weeks as the larval stages of the oyster grow, with the 'spat' ultimately being caught on 'sticks'. Oysters are knocked off these sticks at 0.5 to 3 years of age for growing intertidally on trays until maturity in 3 to 4 years. Alternative growing systems such as baskets and tumblers are also being used, and some oysters are grown subtidally on rafts or on floating culture.

No commercial oyster leases exist in Victorian waters, however, a trial to culture Sydney rock oysters in the Gippsland Lakes system has been proposed. Blue mussels are grown in aquaculture fishery reserves in Port Phillip Bay and Western Port. A small number of permits have also been issued to trial native seaweed culture in aquaculture fishery reserves, but commercial licences are not yet available.

The Sydney rock oyster is also farmed south of Hervey Bay in Queensland, with most leases occurring in Moreton Bay. The seasonal occurrence of the disease QX in south-eastern Queensland waters restricts the tidal areas where oysters can be viably produced and limits the growing season.

1.6.7 Recreational fishing

Recreational fishing in Australia is a multibillion-dollar industry. Most recreational fishing typically occurs in nearshore coastal waters (shore or inshore vessels), and within bays and estuaries. Offshore fishing (>5 km from the coast) only accounts for approximately 4% of recreational fishing activity in Australia; charter fishing vessels are likely to account for the majority of this offshore fishing activity.

The variation in recreational fishing intensity along the coast is illustrated in Figure 1-74; there is moderate to high recreational use along most of the Victorian coast in the EMBA. Common recreational fish species include tiger flathead, bream, snapper, Australian salmon, and lobster. Offshore catches can include mackerel, tuna, groper, and shark.

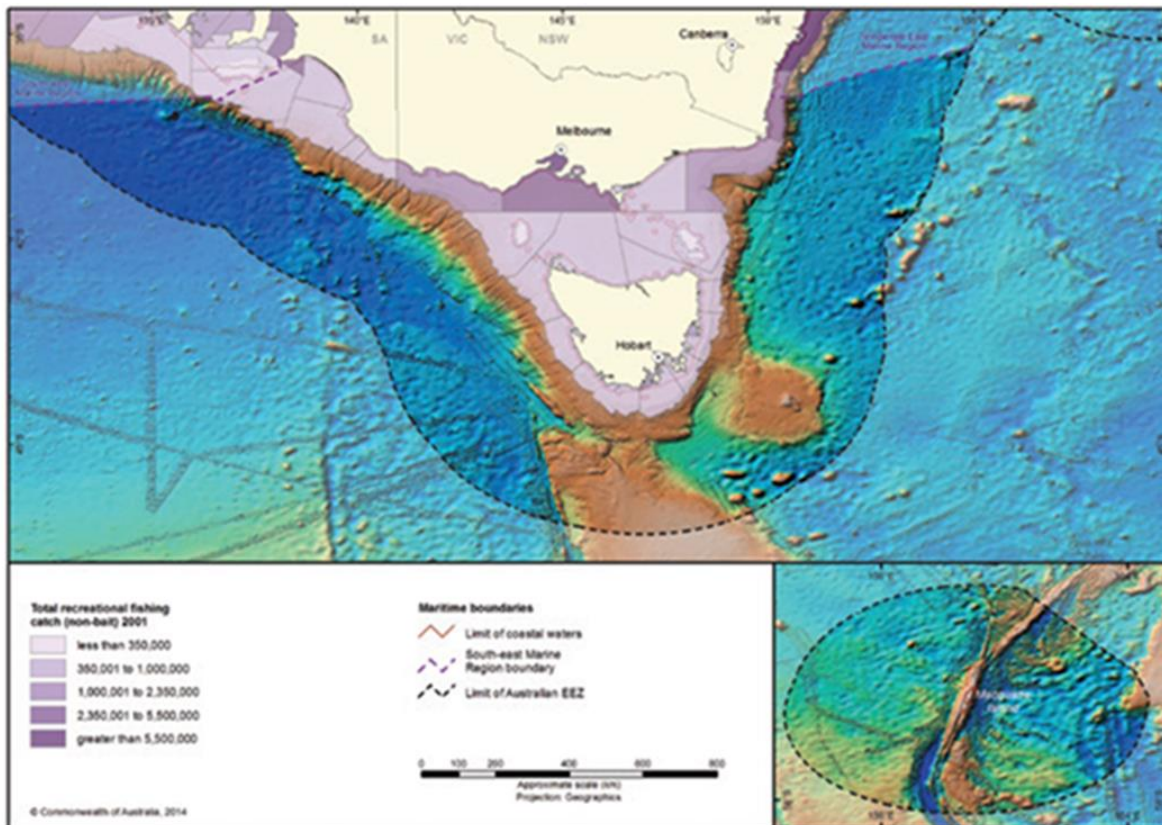


Figure 1-74 Recreational Fishing Catch in Temperate East (Commonwealth of Australia, 2015)

1.6.8 Tourism

The Australian coast and marine waters 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.

In 2013-2014 the tourism industry contributed approximately \$1.2 billion to the Gippsland economy; and employed approximately 12,400 (12.2%) (TourismVictoria, 2014a) (TourismVictoria, 2014b). Overnight visitors to the Gippsland area were predominantly Australian (86% intrastate, 11% interstate), with low (3%) international visitors (TourismVictoria, 2014a). In East Gippsland, primary tourist locations are the Gippsland Lakes (the largest inland waterway in Australia), Lakes Entrance, Marlo, Cape Conran and Mallacoota. The area is renowned for its nature-based tourism (e.g. Croajingolong National Park), recreational fishing and water sports (lake and beaches) (TravelVictoria, 2017).

NSW has triumphed as Australia’s number one destination, with domestic and international visitors delivering almost \$42 billion in expenditure to the state’s visitor economy in the year ending December 2022 (DestinationNSW, 2023a) . The South Coast Region includes all the towns from Wollongong to the Victorian border. In the year ending in March 2023, the south coast region had a total of 12.6 million visitors with an expenditure of 4.1 billion (DestinationNSW, 2023b) .The northern NSW regions, including Coffs harbour, Ballina and North coast. In the year ending in March 2023, the north coast region had a total of 11.8 million visitors with an expenditure of 5.9 billion (DestinationNSW, 2023c)

Tourism in Tasmania directly and indirectly contributes around \$2.59 billion or about 6.7% to Tasmania's Gross Product in 2022-2023 (ToursimTasmania, 2023). Tourism directly and in directly supports around 37,300 jobs in Tasmania or about 12.1% of total Tasmanian employment – the highest share in the country. Visitors spent a total of \$3.853 billion on accommodation, attractions, tours, transport and other goods and services during this period (ToursimTasmania, 2023) .

1.6.9 *Renewable Energy*

The EMBA overlaps Australia's first offshore declared areas available for renewable energy projects (Gippsland, Bass Strait, Illawarra and Hunter (Figure 1-75). The EMBA also overlaps twelve projects that have been granted a feasibility license within the declared areas (Figure 1-75):

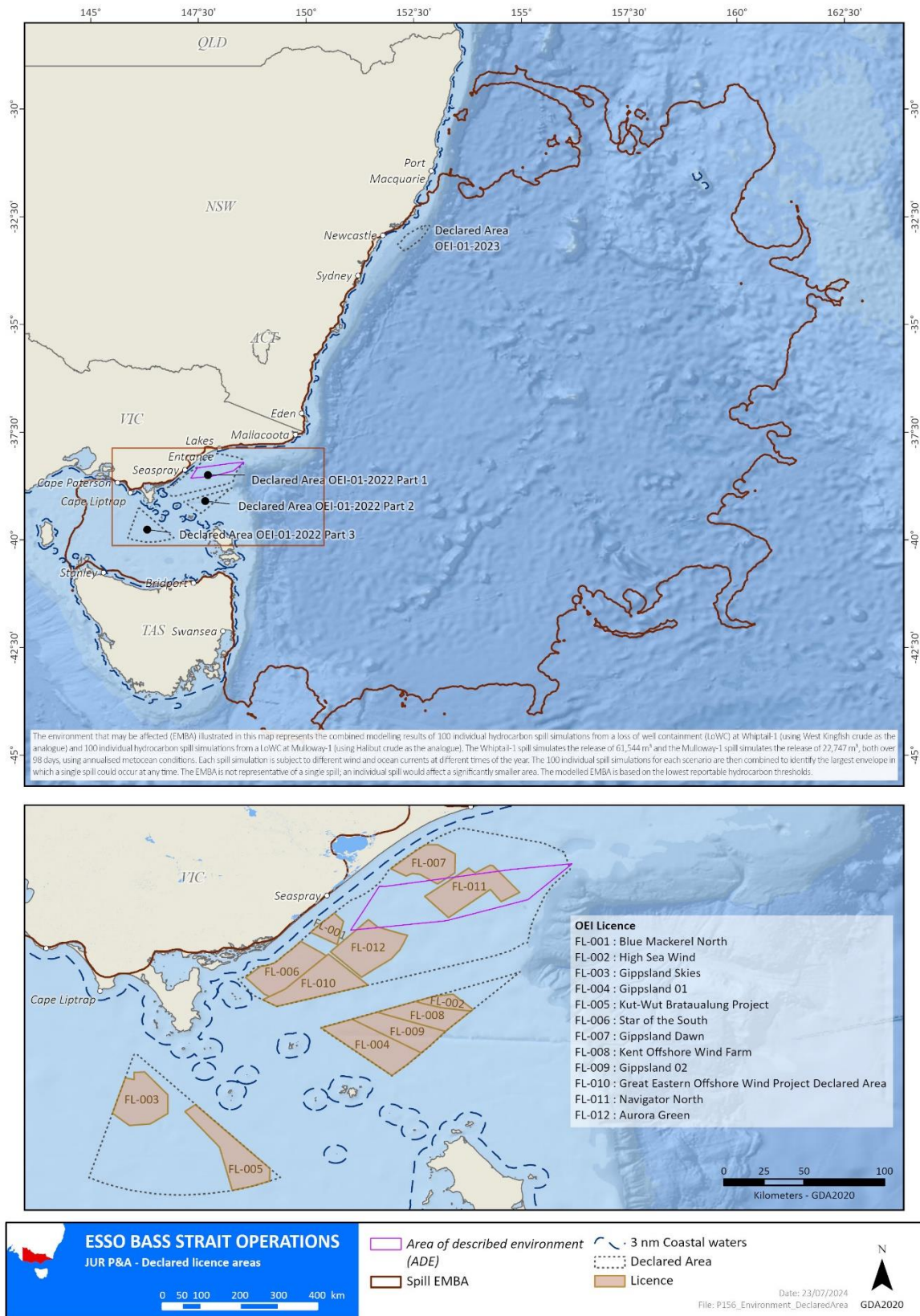


Figure 1-75 Offshore renewable energy declared areas and licence areas within the EMBA

1.6.10 Oil and Gas

Statistics from 2014–2015 showed that oil (38%) and gas (24%) remained Australia's largest energy sources (APPEA, 2017). The industry also contributed approximately \$34 billion to the Australian economy during the 2014–2015 financial year (APPEA, 2016).

Victoria's petroleum (oil and gas) exploration and production is concentrated in the offshore Commonwealth waters of the Otway and Gippsland basins; there are a number of current exploration and offshore production permit areas within both basins (Figure 1-76). Information on the Production licences, Exploration Permits and Retention Leases within Gippsland Basin at the time of writing are presented in Table 1-10.

The Gippsland Basin in southeastern Australia is located about 200 km east of the city of Melbourne, covering about 46 000 km², of which two thirds are located offshore. The Gippsland Basin is recognised as one of Australia’s primary hydrocarbon provinces, having continually produced oil and gas since the late 1960s.

In May 2022, remaining reserves were estimated at 1.64 Tcf (1844.5 PJ) of natural gas and ethane, and 94 MMbbls (552.7 PJ) of oil and natural gas liquids (GeoscienceAustralia, 2022). Several petroleum systems operate in the basin, with the largest oil and gas fields hosted by top-Latrobe Group (Eocene) shallow marine barrier sandstones, and additional discoveries made in intra-Latrobe Group (Upper Cretaceous–Paleocene) coastal plain and deltaic channel sandstones. Despite its mature status, parts of the basin remain underexplored and offer a variety of untested resources (GeoscienceAustralia, 2022).

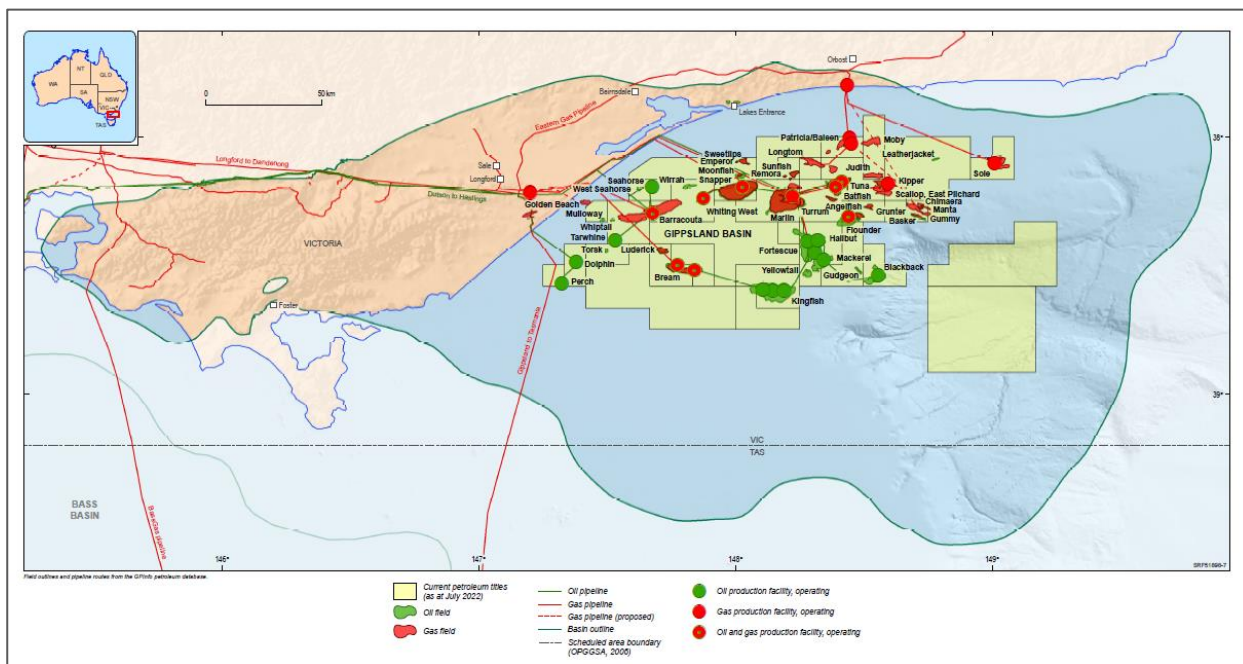


Figure 1-76 Petroleum exploration and production permits, oil and gas fields and petroleum production infrastructure in the Gippsland Basin (GeoscienceAustralia, 2022)

Table 1-10 Production licenses, Exploration Permits and Retention Leases within Gippsland Basin

Title	Title Holder/s	Field
Production Licenses, Gippsland Basin		
VIC/L1	EARPL, BHPB	Barracouta/Tarwhine/ Whiptail
VIC/L10	EARPL, BHPB	Snapper

Title	Title Holder/s	Field
VIC/L11	EARPL, BHPB	Flounder
VIC/L13-14	EARPL, BHPB	Bream
VIC/L15	EARPL, BHPB	Dolphin
VIC/L16	EARPL, BHPB	Torsk
VIC/L17	EARPL, BHPB	Perch
VIC/L18	EARPL, BHPB	Seahorse
VIC/L19	EARPL, BHPB	West Fortescue
VIC/L2	EARPL, BHPB	Barracouta/Whiting/Wirrah
VIC/L20	EARPL, BHPB	Blackback
VIC/L21	Cooper Energy	Patricia Baleen
VIC/L25	EARPL, BHPB, MEPAU	Kipper
VIC/L29	SGH Energy	Longtom
VIC/L3	EARPL, BHPB	Marlin/Turrum/North Turrum
VIC/L32	Cooper Energy	Sole
VIC/L4	EARPL, BHPB	Marlin/Turrum/Tuna/Baldfish/Flounder
VIC/L5	EARPL, BHPB	Halibut/Fortescue/Cobia/ Mackerel
VIC/L6	EARPL, BHPB	Mackerel/Flounder
VIC/L7-8	EARPL, BHPB	Kingfish
VIC/L9	EARPL, BHPB	Tuna
VIC/L31	Carnarvon Hibiscus	West Seahorse (see VIC/P57)
Exploration Permits, Gippsland Basin		
VIC/P47	Emperor Energy / Shelf Energy	Judith/Moby
VIC/P57	Carnarvon Hibiscus	West Seahorse/Sea Lion (See VIC/L31)
VIC/P68	Bass Oil	Leatherjacket
VIC/P70	Esso Deepwater	Dory/Baldfish
VIC/P71	Llanberis Energy	-

Title	Title Holder/s	Field
VIC/P72	Cooper Energy	-
Retention Leases, Gippsland Basin		
VIC/RL1	EARPL, BHP (Pending Renewal)	Golden Beach
VIC/RL13 VIC/RL14 VIC/RL15	Cooper Energy	Basker, Manta, Gummy Field
VIC/RL4	EARPL, BHP (Pending Renewal)	Remora

1.6.11 Shipping

The south-east and eastern coasts are some of Australia's busiest in terms of shipping activity and volumes. 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. Bass Strait is one of Australia's busiest shipping areas, with more than 3,000 vessels passing through Bass Strait each year (NOO, 2002a).

A shipping exclusion zone ('area to be avoided') 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 1-77). 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 Kingfish B platform.

Figure 1-78 shows vessel traffic within the EMBA based on August 2023 AMSA data.

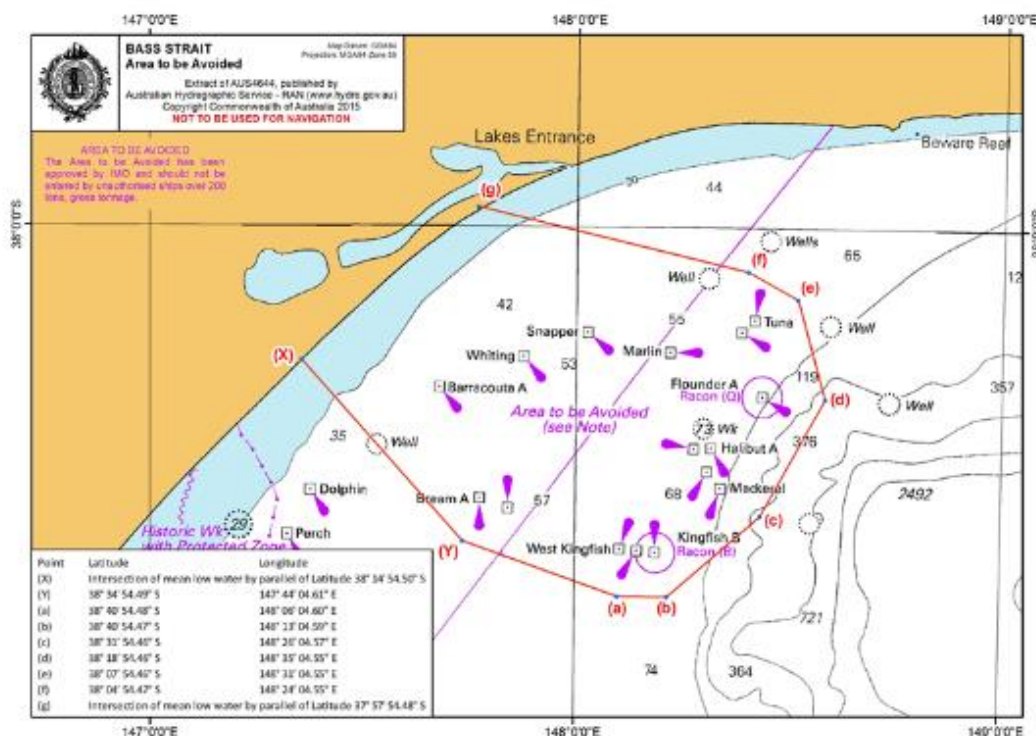
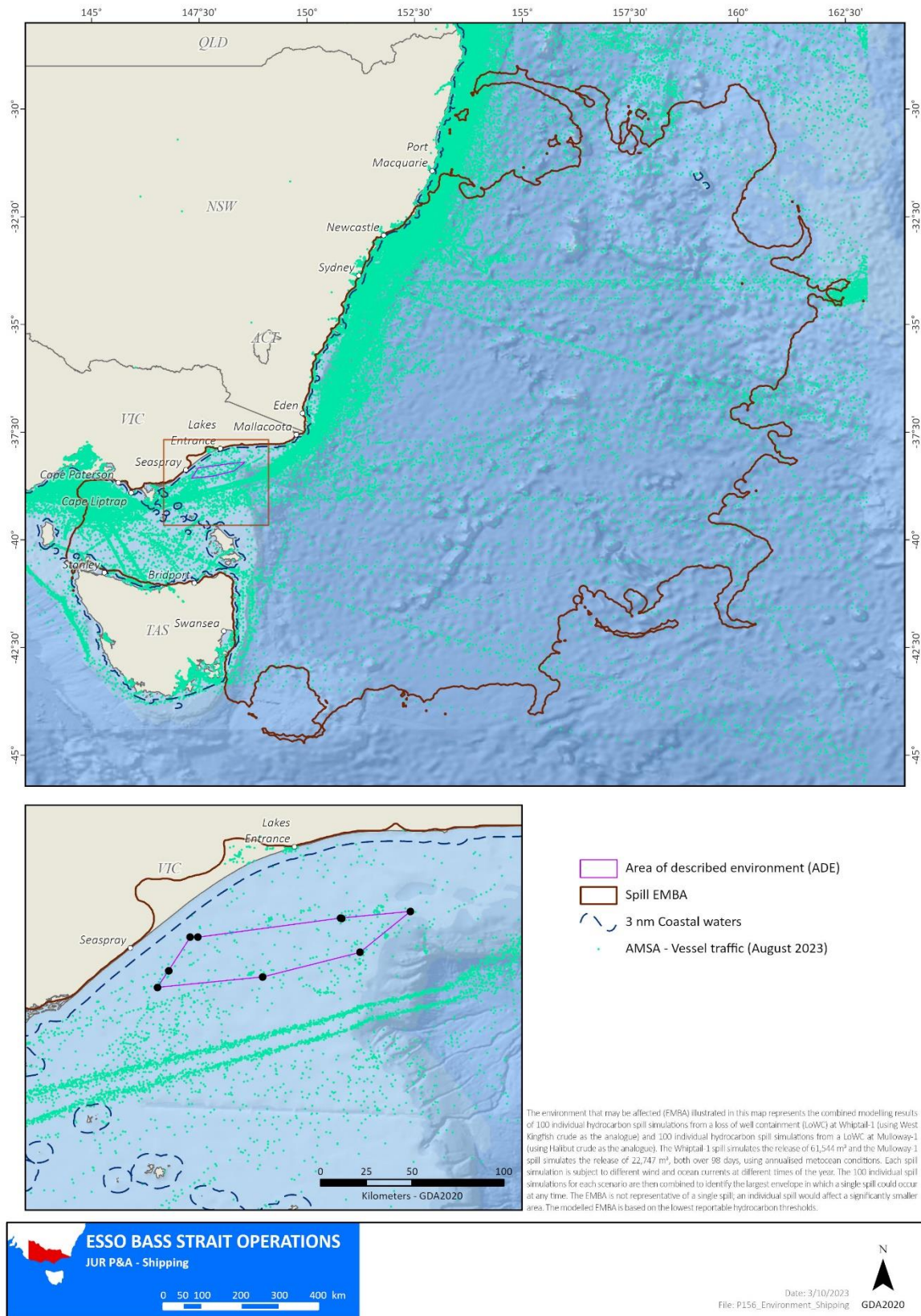


Figure 1-77 Bass Strait Area to be Avoided (ABF, 2019)



The environment that may be affected (EMBA) illustrated in this map represents the combined modelling results of 100 individual hydrocarbon spill simulations from a loss of well containment (LoWC) at Whiptail-1 (using West Kingfish crude as the analogue) and 100 individual hydrocarbon spill simulations from a LoWC at Malloway-1 (using Halibut crude as the analogue). The Whiptail-1 spill simulates the release of 61,544 m³ and the Malloway-1 spill simulates the release of 22,747 m³, both over 98 days, using annualized meteorological conditions. Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill could occur at any time. The EMBA is not representative of a single spill; an individual spill would affect a significantly smaller area. The modelled EMBA is based on the lowest reportable hydrocarbon thresholds.

Figure 1-78 Vessel traffic within the EMBA based on August 2023 AMSA data

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Appendix B: EPBC Act Listed Species in the ADE and EMBA

Table B-1 EPBC Act listed fish (bony) species or species habitat that may occur within the ADE and EMBA.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Fish							
<i>Acentronura tentaculata</i>	Shortpouch pygmy pipehorse			✓	-	-	MO
<i>Brachiopsilus ziebelli</i>	Ziebell's handfish,	V			-	-	LO
<i>Cosmocampus howensis</i>	Lord Howe pipefish			✓	-	-	MO
<i>Epinephelus daemeli</i>	Black rockcod	V			-	-	MO
<i>Festucalex cinctus</i>	Girdled pipefish			✓	-	-	MO
<i>Filicampus tigris</i>	Tiger pipefish			✓	-	-	MO
<i>Galaxiella pusilla</i>	Eastern dwarf galaxias	V			-	-	KO
<i>Halicampus boothae</i>	Booth's pipefish			✓	-	-	MO
<i>Heraldia nocturna</i>	Upside-down pipefish			✓	-	-	MO
<i>Hippichthys penicillus</i>	Beady pipefish			✓	-	-	MO
<i>Hippocampus abdominalis</i>	Big-belly seahorse			✓	-	-	MO
<i>Hippocampus breviceps</i>	Short-head seahorse			✓	-	-	MO
<i>Hippocampus kelloggi</i>	Kellogg's seahorse			✓	-	-	MO
<i>Hippocampus minotaur</i>	Bullneck seahorse			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Hippocampus whitei</i>	White's seahorse	E		✓	-	-	KO
<i>Histiogamphelus briggsii</i>	Crested pipefish			✓	-	-	MO
<i>Histiogamphelus cristatus</i>	Rhino pipefish			✓	-	-	MO
<i>Hoplostethus atlanticus</i>	Orange roughy	CD			-	-	LO
<i>Hypselognathus rostratus</i>	Knifesnout pipefish			✓	-	-	MO
<i>Kaupus costatus</i>	Deepbody pipefish			✓	-	-	MO
<i>Kimblaeus bassensis</i>	Trawl pipefish			✓	-	-	MO
<i>Leptoichthys fistularius</i>	Brushtail pipefish			✓	-	-	MO
<i>Lissocampus caudalis</i>	Australian smooth pipefish			✓	-	-	MO
<i>Lissocampus runa</i>	Javelin pipefish			✓	-	-	MO
<i>Maccullochella peelii</i>	Murray cod				-	-	KO
<i>Macquaria australasica</i>	Macquarie perch				-	-	KO
<i>Maroubra perserrata</i>	Sawtooth pipefish			✓	-	-	MO
<i>Mitotichthys mollisoni</i>	Mollison's pipefish			✓	-	-	MO
<i>Mitotichthys semistriatus</i>	Halfbanded pipefish			✓	-	-	MO
<i>Mitotichthys tuckeri</i>	Tucker's pipefish			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Notiocampus ruber</i>	Red pipefish			✓	-	-	MO
<i>Phycodurus eques</i>	Leafy seadragon			✓	-	-	MO
<i>Phyllopteryx taeniolatus</i>	Common seadragon			✓	-	-	MO
<i>Prototroctes maraena</i>	Australian grayling	V		✓	-	-	KO
<i>Pugnaso curtirostris</i>	Pugnose pipefish			✓	-	-	MO
<i>Rexea solandri</i> (eastern Australian population)	Eastern gemfish	CD		✓	-	-	LO
<i>Seriolella brama</i>	Blue warehou	CD		✓	-	-	KO
<i>Solegnathus dunckeri</i>	Duncker's pipehorse			✓	-	-	MO
<i>Solegnathus robustus</i>	Robust pipehorse			✓	-	-	MO
<i>Solegnathus spinosissimus</i>	Spiny pipe horse			✓	-	-	MO
<i>Solenostomus cyanopterus</i>	Robust ghost pipefish			✓	-	-	MO
<i>Solenostomus paradoxus</i>	Ornate ghost pipefish			✓	-	-	MO
<i>Stigmatopora argus</i>	Spotted pipefish			✓	-	-	MO
<i>Stigmatopora nigra</i>	Widebody pipefish			✓	-	-	MO
<i>Stipecampus cristatus</i>	Ringback pipefish			✓	-	-	MO
<i>Syngnathoides biaculeatus</i>	Double-end pipehorse,			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Thunnus maccoyii</i>	Southern bluefin tuna	CD			-	-	LO
<i>Thymichthys politus</i>	Red handfish	CE			-	-	MO
<i>Trachyrhamphus bicoarctatus</i>	Bentstick pipefish			✓	-	-	MO
<i>Urocampus carinirostris</i>	Hairy pipefish			✓	-	-	MO
<i>Vanacampus margaritifer</i>	Mother-of-pearl pipefish			✓	-	-	MO
<i>Vanacampus phillipi</i>	Port Phillip pipefish			✓	-	-	MO
<i>Vanacampus poecilolaemus</i>	Long-snout pipefish			✓	-	-	MO
<u>Threatened Species:</u> V Vulnerable E Endangered CD Conservation Dependant		<u>Type of Presence:</u> MO Species or species habitat may occur within the area LO Species or species habitat likely to occur within the area KO Species or species habitat known to occur within the area					

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Table B-2 EPBC Act listed fish (cartilaginous) species or species habitat that may occur within the ADE and EMBA.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Sharks and Rays							
<i>Carcharias Taurus</i> (east coast population)	Grey nurse shark (east coast population)	CE			-	m	KO
<i>Carcharodon carcharias</i>	Great white shark	V	✓			ar	KO
<i>Centrophorus harrissoni</i>	Harrisson's dogfish	CD			-	-	LO
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark		✓		-	-	LO
<i>Centrophorus uyato</i>	Little gulper shark	CD			-	-	LO
<i>Galeorhinus galeus</i>	School shark				-	-	LO
<i>Isurus oxyrinchus</i>	Shortfin mako		✓		-	-	LO
<i>Isurus paucus</i>	Longfin mako		✓		-	-	LO
<i>Lamna nasus</i>	Porbeagle		✓		-	-	LO
<i>Manta birostris</i>	Giant manta ray		✓		-	-	KO
<i>Mobula alfredi</i>	Reef manta ray		✓		-	-	KO
<i>Rhincodon typus</i>	Whale shark	V	✓		-	-	MO
<i>Sphyrna lewini</i>	Scalloped hammerhead	CD			-	-	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<u>Threatened Species:</u> V Vulnerable CE Critically Endangered CD Conservation Dependant	<u>Type of Presence:</u> MO Species or species habitat may occur within the area LO Species or species habitat likely to occur within the area KO Species or species habitat known to occur within the area				<u>Biologically Important Areas:</u> b Breeding f Foraging m Migration d Distribution a Aggregation r Reproduction		

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Note: BIA spatial data has undergone revision and some of the changes was not detected by the PMST, this information was extracted from the Australian Marine Spatial Information System (AMIS).

Table B-3 EPBC Act listed seabird and shorebird species or species habitat that may occur within the ADE and EMBA

Note: only seabirds and shorebirds known to occur in marine or coastal environments are listed below. See Appendix C and Appendix D for a full list of birds that were detected by the EPBC Act Protected Matters Search Tool Reports for the ADE and EMBA respectively.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Seabirds							
Albatross							
<i>Diomedea exulans antipodensis</i>	Antipodean albatross	V	✓ (M)	✓	f	f	FLO
<i>Diomedea antipodensis gibsoni</i>	Gibson’s albatross	V		✓	-	-	FLO
<i>Diomedea epomophora</i>	Southern royal albatross	V	✓ (M)	✓	-	-	FLO
<i>Diomedea exulans (sensu lato)</i>	Wandering albatross	V	✓ (M)	✓	f	f	FLO
<i>Diomedea sanfordi</i>	Northern royal albatross	E	✓ (M)	✓	-	-	FLO
<i>Phoebastria fusca</i>	Sooty albatross	V	✓ (M)	✓	-	-	MO
<i>Thalassarche bulleri</i>	Buller’s albatross	V	✓ (M)	✓	f	f	FLO
<i>Thalassarche bulleri platei</i>	Northern Buller’s albatross	V	✓ (M)	✓	-	-	FLO
<i>Thalassarche chlororhynchos bassi</i> (<i>Thalassarche carteri</i>)	Indian yellow-nosed albatross	V	✓ (M)	✓	f	f	LO
<i>Thalassarche cauta cauta</i>	Shy albatross	E	✓ (M)	✓	f	f	FLO
<i>Thalassarche chrysostoma</i>	Grey-headed albatross	E	✓(M)	✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Thalassarche eremita</i>	Chatham albatross	E	✓ (M)	✓	-	-	FLO
<i>Thalassarche impavida</i>	Campbell albatross	V	✓ (M)	✓	f	f	FKO
<i>Thalassarche melanophris</i>	Black-browed albatross	V	✓ (M)	✓	f	f	FKO
<i>Thalassarche salvini</i>	Salvin's albatross	V	✓ (M)	✓	-	-	FLO
<i>Thalassarche steadi</i>	White-capped albatross	V	✓(M)	✓	-	f	FKO
Petrels							
<i>Fregatta grallaria grallaria</i>	White-bellied storm-petrel (Tasman Sea)	V			-	r,f	LO
<i>Halobaena caerulea</i>	Blue petrel	V		✓	-	-	MO
<i>Macronectes giganteus</i>	Southern giant petrel	E	✓ (M)	✓	-	f	FLO
<i>Macronectes halli</i>	Northern giant petrel	V	✓ (M)	✓	-	f	FLO
<i>Oceanites oceanites</i>	Wilson's storm petrel				-	m	MKO
<i>Pelagodroma marina</i>	White-faced storm petrel			✓	f	r,f	BKO
<i>Pelecanoides urinatrix</i>	Common diving petrel			✓	f	r,f	BKO
<i>Procellaria parkinsoni</i>	Black petrel				-	f	FLO
<i>Pterodroma cervicalis</i>	White-necked petrel			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Pterodroma heraldica</i>	Herald petrel	CE		✓	-	-	LO
<i>Pterodroma leucoptera leucoptera</i>	Gould's petrel	E			-	-	BK
<i>Pterodroma macroptera</i>	Great-winged petrel				-	f	LO
<i>Pterodroma mollis</i>	Soft-plumaged petrel	V		✓	-	f	MO
<i>Pterodromoa neglecta neglecta</i>	Kermadec petrel (western)	V			-	f	FMO
<i>Pterodroma nigripennis</i>	Black-winged petrel			✓	-	r,f	BKO
<i>Pterodroma solandri</i>	Providence petrel			✓	-	r,f	BKO
Shearwaters							
<i>Calonectris leucomelas</i>	Streaked shearwater		✓(M)		-	-	MO
<i>Ardenna carneipes</i>	Flesh-footed shearwater		✓(M)	✓	f	r,f	KO
<i>Ardenna grisea</i>	Sooty shearwater		✓(M)	✓	-	r,f	KO
<i>Ardenna pacifica</i>	Wedge-tailed shearwater		✓(M)		-	r,f	KO
<i>Ardenna tenuirostris</i>	Short-tailed shearwater		✓(M)	✓	f	r,f	KO
<i>Puffinus assimilis</i>	Little shearwater				-	r,f	BKO
Shorebirds and other seabirds							

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Actitis hypoleucos</i>	Common sandpiper		✓ (M)	✓	-	-	KO
<i>Anous albivitta</i>	Grey noddy				-	r,f	LO
<i>Anous minutus</i>	Black noddy				-	r,f	LO
<i>Anous stolidus</i>	Common noddy		✓ (M)	✓	-	r,f	LO
<i>Arenaria interpres</i>	Ruddy turnstone		✓ (W)	✓	-	-	RKO
<i>Apus pacificus</i>	Fork-tailed swift		✓(M)	✓	-	-	LO
<i>Botaurus poiciloptilus</i>	Australasian bittern	E			-	-	KO
<i>Calidris acuminata</i>	Sharp-tailed sandpiper		✓ (M)	✓	-	-	RKO
<i>Calidris alba</i>	Sanderling		✓ (W)	✓	-	-	RKO
<i>Calidris canutus</i>	Red knot	E	✓ (W)	✓	-	-	MO
<i>Calidris ferruginea</i>	Curlew sandpiper	CE	✓ (W)	✓	-	-	KO
<i>Calidris melanotos</i>	Pectoral sandpiper		✓ (W)	✓	-	-	KO
<i>Calidris ruficollis</i>	Red-necked stint		✓ (W)	✓	-	-	RKO
<i>Calidris subminuta</i>	Long-toed stint				-	-	RKO
<i>Calidris tenuirostris</i>	Great knot	CE	✓ (W)	✓	-	-	RKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Charadrius mongolus</i>	Lesser sand plover	E	✓ (W)	✓	-	-	RKO
<i>Charadrius ruficapillus</i>	Red-capped plover			✓	-	-	KO
<i>Charadrius veredus</i>	Oriental plover		✓ (W)	✓	-	-	KO
<i>Chroicocephalus novaehollandiae</i>	Silver gull			✓	-	-	BKO
<i>Dasyomis brachypterus</i>	Eastern bristlebird	E			-	-	KO
<i>Eudyptula minor</i>	Little penguin			✓	-	r,f	BKO
<i>Fregata ariel</i>	Lesser frigatebird		✓ (M)	✓	-	-	MO
<i>Fregata minor</i>	Great frigatebird		✓ (M)	✓	-	-	MO
<i>Gallinago hardwickii</i>	Latham's snipe		✓ (W)	✓	-	-	RKO
<i>Gallinago megala</i>	Swinhoe's snipe		✓ (W)	✓	-	-	RLO
<i>Gallinago stenura</i>	Pin-tailed snipe		✓ (W)	✓	-	-	RKO
<i>Gygis alba</i>	White tern				-	r,f	BKO
<i>Haliaeetus leucogaster</i>	White-bellied sea eagle			✓	-	-	BKO
<i>Heteroscelus brevipes</i>	Grey-tailed tattler		✓	✓	-	-	RKO
<i>Himantopus himantopus</i>	Black-winged stilt		✓	✓	-	-	RKO
<i>Hirundapus caudacutus</i>	White-throated needletail	V	✓ (T)	✓	-	-	RKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Hydroprogne caspia</i>	Caspian tern		✓	✓	-	-	BKO
<i>Larus pacificus</i>	Pacific gull			✓	-	-	BKO
<i>Larus dominicanus</i>	Kelp gull			✓	-	-	BKO
<i>Limosa lapponica</i>	Bar-tailed godwit		✓ (W)	✓	-	-	KO
<i>Limosa lapponica baueri</i>	Nunivak bar-tailed godwit	V			-	-	KO
<i>Limosa limosa</i>	Black-tailed godwit		✓ (W)	✓	-	-	RKO
<i>Limicola falcinellus</i>	Broad-billed sandpiper		✓ (W)	✓	-	-	RKO
<i>Limnodromus semipalmatus</i>	Asian dowitcher		✓	✓	-	-	KO
<i>Morus serrator</i>	Australasian gannet			✓	-	f	BKO
<i>Neophema chrysogaster</i>	Orange-bellied parrot	CE		✓	-	-	KO
<i>Numenius madagascariensis</i>	Eastern curlew	CE	✓ (W)	✓	-	-	KO
<i>Numenius minutus</i>	Little curlew		✓ (W)	✓	-	-	RLO
<i>Numenius phaeopus</i>	Whimbrel		✓ (W)	✓	-	-	RKO
<i>Pachyptila turtur</i>	Fairy prion			✓	-	-	KO
<i>Pachyptila turtur subantarctica</i>	Fairy prion (southern)	V			-	-	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Pandion haliaetus</i>	Osprey		✓ (W)	✓	-	-	KO
<i>Pluvialis squatarola</i>	Grey plover		✓ (W)	✓	-	-	RKO
<i>Phalacrocorax fuscescens</i>	Black-faced cormorant			✓	-	r,f	BKO
<i>Phaethon lepturus</i>	White-tailed tropicbird		✓ (M)	✓	-	-	KO
<i>Phaethon rubricauda</i>	Red-tailed tropicbird		✓ (M)	✓	-	r,f	BKO
<i>Philmachus pugnax</i>	Ruff		✓(W)	✓	-	-	RKO
<i>Recurvirostra novaehollandiae</i>	Red-necked avocet			✓	-	-	RKO
<i>Rhipidura rufifrons</i>	Rufous fantail		✓ (T)	✓	-	-	KO
<i>Rostratula australis</i>	Australian painted snipe	E		✓	-	-	KO
<i>Stercorarius antarcticus</i>	Brown skua			✓	-	-	MO
<i>Sterna bergii</i>	Crested tern		✓(W)	✓	-	r,f	BKO
<i>Sterna fuscata</i>	Sooty tern			✓	-	r,f	BKO
<i>Sterna striata</i>	White-fronted tern			✓	-	-	FMO
<i>Sternula albifrons</i>	Little tern		✓ (M)	✓	-	-	BKO
<i>Sternula nereis</i>	Fairy tern			✓	-	-	BKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Sternula nereis nereis</i>	Australian fairy tern	V	✓ (M)	✓	-	-	KO
<i>Sula dactylatra</i>	Masked booby		✓ (M)	✓	-	r,f	BKO
<i>Thalasseus bergii</i>	Greater Crested tern		✓ (W)	✓	-	-	BKO
<i>Thinornis cucullatus</i>	Hooded plover			✓	-	-	KO
<i>Thinornis cucullatus cucullatus</i>	Eastern hooded plover	V		✓	-	-	KO
<i>Tringa glareola</i>	Wood sandpiper		✓ (W)	✓	-	-	KO
<i>Tringa brevipes</i>	Grey-tailed tattler		✓ (W)	✓	-	-	RKO
<i>Tringa incana</i>	Wandering tattler		✓ (W)	✓	-	-	KO
<i>Tringa nebularia</i>	Common greenshank		✓ (W)	✓	-	-	KO
<i>Xenus cinereus</i>	Terek sandpiper		✓ (W)	✓	-	-	KO
Threatened Species: V Vulnerable E Endangered CE Critically Endangered Biologically Important Areas: r Reproduction f Foraging	Type of Presence: MO Species or species habitat may occur within the area LO Species or species habitat likely to occur within the area KO Species or species habitat known to occur within the area FMO foraging, feeding or related behaviour may occur within the area FLO foraging, feeding or related behaviour likely to occur within the area FKO foraging, feeding or related behaviour known to occur within the area						

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Migratory Species:							
M Marine	BKO Breeding known to occur within the area						
W Wetland	RMO Roosting may occur within the area						
T Terrestrial	RLO Roosting likely to occur within the area						
	RKO Roosting known to occur within the area						
	MLO Migration route likely to occur within the area						
	MKO Migration route known to occur within the area						

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Note: BIA spatial data has undergone revision and some of the changes was not detected by the PMST, this information was extracted from the Australian Marine Spatial Information System (AMSIS).

Table B-4 EPBC Act listed cetacean or species habitat that may occur within the ADE and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Whales							
<i>Balaenoptera acutorostrata</i>	Minke whale						MO
<i>Balaenoptera bonaerensis</i>	Antartic minke whale		✓				LO
<i>Balaenoptera borealis</i>	Sei whale	V	✓				FLO
<i>Balaenoptera edeni</i>	Bryde’s whale		✓				MO
<i>Balaenoptera musculus</i>	Blue whale	E	✓				LO
<i>Balaenoptera musculus brevicauda</i>	Pygmy blue whale	E	✓		f	f	KO
<i>Balaenoptera physalus</i>	Fin whale	V	✓				FLO
<i>Berardius arnuxii</i>	Arnoux’s beaked whale						MO
<i>Caperea marginata</i>	Pygmy right whale		✓				FLO
<i>Eubalaena australis</i>	Southern right whale	E	✓			m,r**	BKO
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale						MO
<i>Globicephala melas</i>	Long-finned pilot whale						MO
<i>Hyperoodon planifrons</i>	Southern bottlenose whale						MO
<i>Kogia breviceps</i>	Pygmy sperm whale						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Kogia sima</i>	Dwarf sperm whale						MO
<i>Megaptera novaeangliae</i>	Humpback whale		✓			m	FKO
<i>Mesoplodon bowdoini</i>	Andrew’s beaked whale						MO
<i>Mesoplodon densirostris</i>	Blainville’s beaked whale						MO
<i>Mesoplodon ginkgodens</i>	Gingko-toothed beaked whale						MO
<i>Mesoplodon grayi</i>	Gray’s beaked whale						MO
<i>Mesoplodon hectori</i>	Hector’s beaked whale						MO
<i>Mesoplodon layardii</i>	Strap-toothed beaked whale						MO
<i>Mesoplodon mirus</i>	True’s beaked whale						MO
<i>Physeter microcephalus</i>	Sperm whale		✓				MO
<i>Tasmacetus shepherdi</i>	Shepherd’s beaked whale						MO
<i>Ziphius cavirostris</i>	Cuvier’s beaked whale						MO
Dolphins							
<i>Delphinus delphis</i>	Common dolphin						MO
<i>Feresa attenuata</i>	Pygmy killer whale						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale						MO
<i>Globicephala melas</i>	Long-finned pilot whale						MO
<i>Grampus griseus</i>	Risso's dolphin						MO
<i>Lagenorhynchus obscurus</i>	Dusky dolphin		✓				LO
<i>Lissodelphiss peronii</i>	Southern right whale dolphin						MO
<i>Orcinus orca</i>	Killer whale		✓				LO
<i>Pseudorca crassidens</i>	False killer whale						LO
<i>Stenella attenuata</i>	Spotted dolphin						MO
<i>Stenella coeruleoalba</i>	Striped dolphin						MO
<i>Stenella longirostris</i>	Long-snouted spinner dolphin						MO
<i>Steno bredanensis</i>	Rough-toothed dolphin						MO
<i>Tasmacetus shepherdi</i>	Shepherd's beaked whale						MO
<i>Tursiops aduncus</i>	Indian Ocean bottlenose dolphin					b	LO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Tursiops truncatus s. str.</i>	Bottlenose dolphin						MO
<p><u>Threatened Species:</u></p> <p>V Vulnerable</p> <p>E Endangered</p> <p><u>Biologically Important Areas:</u></p> <p>b breeding</p> <p>c calving</p> <p>f foraging</p> <p>m migration</p> <p>d distribution</p> <p>kcr known core range</p>		<p><u>Type of Presence:</u></p> <p>MO Species or species habitat may occur within the area</p> <p>LO Species or species habitat likely to occur within the area</p> <p>KO Species or species habitat known to occur within the area</p> <p>FLO Foraging, feeding or related behaviour likely to occur within the area</p> <p>FKO Foraging, feeding or related behaviour known to occur within the area</p> <p>BKO Breeding known to occur within the area</p>					

Note: Shaded species denotes that they occur in both the ADE and the EMBA **Note:** BIA spatial data has undergone revision and some of the changes was not detected by the PMST, this information was extracted from the Australian Marine Spatial Information System (AMSIS).

Table B-5 EPBC Act listed pinnipeds or species habitat that may occur within the ADE and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Arctocephalus forsteri</i>	New Zealand fur seal			✓	-	-	MO
<i>Arctocephalus pusillus</i>	Australian fur seal			✓	-	-	BKO
<p><u>Type of Presence:</u> MO Species or species habitat may occur within the area BKO Breeding known to occur within the area</p>							

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Table B-6 EPBC Act listed sirenia or species habitat that may occur within ADE and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
<i>Dugong dugon</i>	Dugong		✓	✓	-	-	MO
<p><u>Type of Presence:</u> MO Species or species habitat may occur within the area</p>							

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Table B-7 EPBC Act listed marine reptiles or species habitat that may occur within the Potentially ADE and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					ADE	EMBA	
Turtles							
<i>Caretta caretta</i>	Loggerhead turtle	E	✓	✓	-	-	FKO
<i>Chelonia mydas</i>	Green turtle	V	✓	✓	-	-	FKO
<i>Dermochelys coriacea</i>	Leatherback turtle	E	✓	✓	-	-	FKO
<i>Eretmochelys imbricata</i>	Hawksbill turtle	V	✓	✓	-	-	FKO
<i>Natator depressus</i>	Flatback turtle	V	✓	✓	-	-	KO
Sea snakes							
<i>Hydrophis elegans</i>	Elegant sea snake			✓	-	-	MO
<i>Pelamis platurus</i>	Yellow-bellied sea snake			✓	-	-	MO
<u>Threatened Species:</u> V Vulnerable E Endangered	<u>Type of Presence:</u> FKO Foraging, feeding or related behaviour known to occur within the area BLO Breeding likely to occur within the area KO Species or species habitat known to occur within the area						

Note: Shaded species denotes that they occur in both the ADE and the EMBA.

Appendix C: EPBC Act Protected Matters Report – ADE



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-Aug-2023

[Summary](#)

[Details](#)

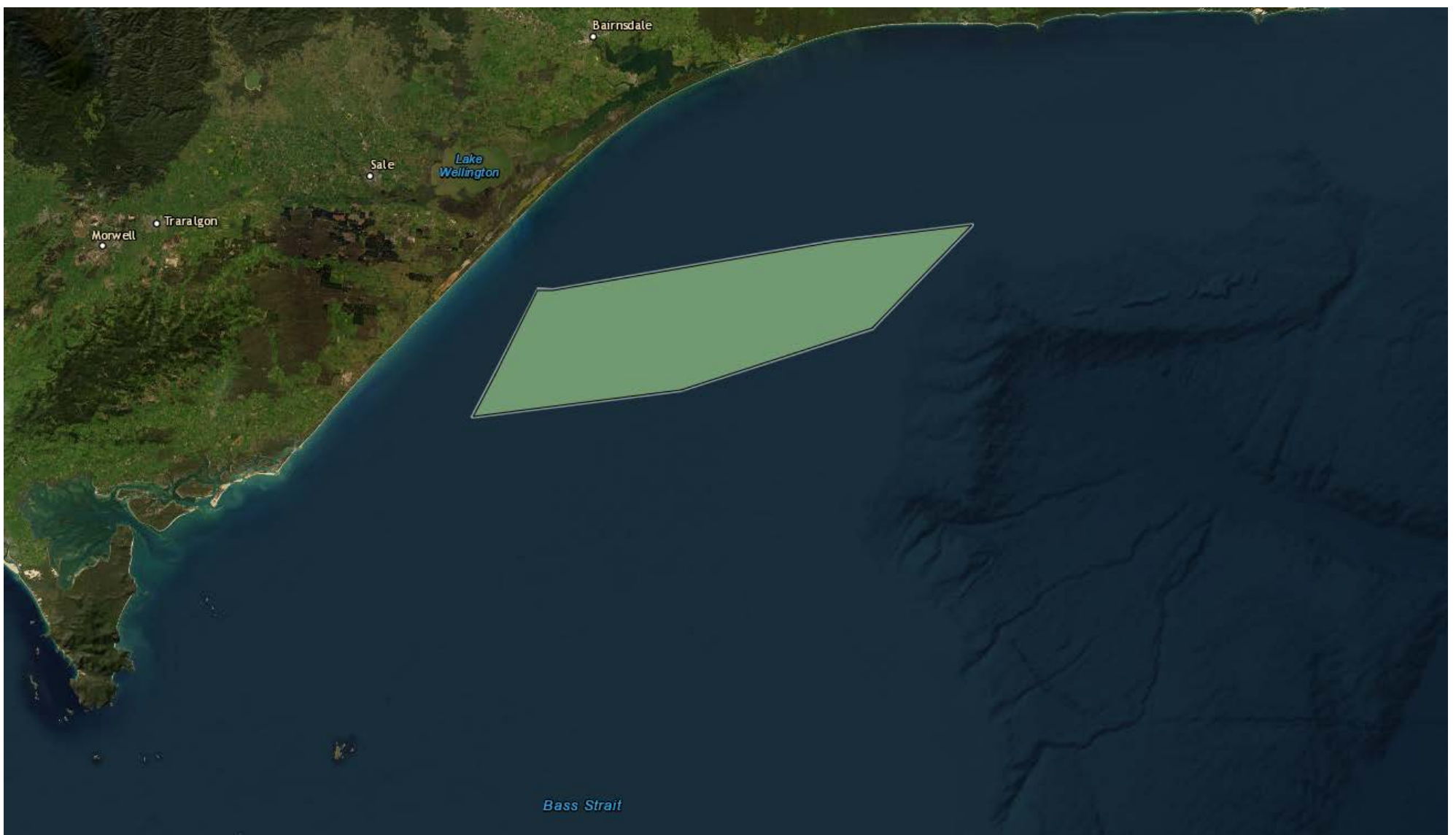
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	43
Listed Migratory Species:	43

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:	62
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:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	42
Key Ecological Features (Marine):	1
Biologically Important Areas:	17
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

Buffer Status

Commonwealth Marine Areas (EPBC Act)

In feature area

Commonwealth Marine Areas (EPBC Act)

In feature 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

Buffer Status

BIRD

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

In feature area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

In feature area

[Diomedea antipodensis](#)

Antipodean Albatross [64458]

Vulnerable

Foraging, feeding or related behaviour likely to occur within area

In feature area

[Diomedea antipodensis gibsoni](#)

Gibson's Albatross [82270]

Vulnerable

Foraging, feeding or related behaviour likely to occur within area

In feature area

[Diomedea epomophora](#)

Southern Royal Albatross [89221]

Vulnerable

Foraging, feeding or related behaviour likely to occur within area

In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature 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	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
FISH			
Hoplostethus atlanticus Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area	In feature area
Rexea solandri (eastern Australian population) Eastern Gemfish [76339]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area	In feature 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	In feature area
Centrophorus uyato listed as Centrophorus zeehaani Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area	In feature 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	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Ardeanna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardeanna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area	In feature area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status	
Bird				
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area	
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area	
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area	In feature area	
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area	
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area	
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area	
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area	
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area	
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area	

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In feature area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Fish			
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In feature area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In feature area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area	In feature area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In feature area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In feature area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area	In feature area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area	In feature area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area	In feature area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area	In feature area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In feature area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In feature area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In feature area
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area

Whales and Other Cetaceans

[Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area	In feature area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area	In feature area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area	In feature area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area	In feature area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area	In feature area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area	In feature area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area	In feature area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In feature area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Greater Gippsland Offshore Wind Project	2022/09379		Assessment	In feature area
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed	In feature area
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	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41	2004/1876	Not Controlled Action	Completed	In feature area
Basker-Manta-Gummy Oil Development	2011/6052	Not Controlled Action	Completed	In feature area
Basker-Manta Oil Field Development	2005/2026	Not Controlled Action	Completed	In feature area
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed	In feature area
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed	In feature area
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed	In feature area
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed	In feature area
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed	In feature area
East Pilchard exploration well	2001/137	Not Controlled Action	Completed	In feature area
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed	In feature area
Hemingway1/Oil Exploration	2001/177	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed	In feature area
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed	In feature area
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed	In feature area
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed	In feature area
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed	In feature area
Turrum Phase 2 Development Project	2008/4191	Not Controlled Action	Completed	In feature area
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Not controlled action (particular manner)				
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Gas Pipeline	2000/20	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Golden Beach gas field development	2003/1031	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Inspection of project vessels for presence of invasive marine pests in Commonwealth waters off Victo	2012/6362	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Longtom-5 Offshore Production Drilling (Vic/L29), VIC	2012/6498	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Longtom South -1 Exploration Drilling	2011/6217	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Non-exclusive 3-D Marine Seismic Survey, Bass Strait	2002/775	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Seismic Exploration in Permit VIC/P41	2001/267	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Seismic Survey	2001/206	Not Controlled Action	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
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Not controlled action (particular manner)				
		(Particular Manner)		
Seismic survey, Gippsland Basin	2001/525	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Tuskfish 3D Seismic Survey, Bass Strait	2002/864	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Referral decision

Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed	In feature area
Longtom 5 Offshore Production Drilling (VIC/L29)	2012/6404	Referral Decision	Completed	In feature area
Longtom-5 Offshore Production Drilling (Vic/L29)	2012/6413	Referral Decision	Completed	In feature area
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed	In feature area

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	Buffer Status
Upwelling East of Eden	South-east	In feature area

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Ardeanna tenuirostris			
Short-tailed Shearwater [82652]	Foraging	Known to occur	In feature area
Diomedea exulans (sensu lato)			
Wandering Albatross [1073]	Foraging	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur	In feature area
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur	In feature area
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur	In feature area
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur	In feature area
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur	In feature area
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur	In feature area
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur	In feature area
Sharks			
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur	In feature area
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur	In feature area
Carcharodon carcharias White Shark [64470]	Distribution	Likely to occur	In feature area
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur	In feature area
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur	In feature area
Whales			
Balaenoptera musculus breviceuda Pygmy Blue Whale [81317]	Distribution	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix D: EPBC Act Protected Matters Report – EMBA



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 18-Aug-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	3
National Heritage Places:	14
Wetlands of International Importance (Ramsar)	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	8
Listed Threatened Ecological Communities:	21
Listed Threatened Species:	180
Listed Migratory Species:	96

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:	451
Commonwealth Heritage Places:	58
Listed Marine Species:	145
Whales and Other Cetaceans:	40
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	2
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:	76
Regional Forest Agreements:	4
Nationally Important Wetlands:	44
EPBC Act Referrals:	185
Key Ecological Features (Marine):	6
Biologically Important Areas:	67
Bioregional Assessments:	2
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
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Natural

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
Hunter estuary wetlands	Within 10km of Ramsar site

Ramsar Site Name	Proximity
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)
- 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
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
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
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
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
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
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
null		

Scientific Name	Threatened Category	Presence Text
Mordacia praecox Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	Species or species habitat likely to occur within area
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 known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	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

Scientific Name	Threatened Category	Presence Text
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
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour 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	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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	Species or species habitat likely 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]	Vulnerable	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 likely 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

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
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may 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 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 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	Species or species habitat 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
FISH		
Epinephelus daemeli 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
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
Serirolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
FROG		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni Littlejohn's Tree Frog, Heath Frog [64733]	Endangered	Species or species habitat known to occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
Litoria watsoni 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 known to occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area
Uperoleia mahonyi Mahony's Toadlet [89189]	Endangered	Species or species habitat known to occur within area
INSECT		
Austrocordulia leonardi Sydney Hawk Dragonfly [84741]	Endangered	Species or species habitat likely 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	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
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
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

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 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
OTHER		
Dendronephthya australis Cauliflower Soft Coral [90325]	Endangered	Species or species habitat known to occur within area
PLANT		
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	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 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
Allocasuarina glareicola [21932]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Allocasuarina portuensis Nielsen Park She-oak [21937]	Endangered	Species or species habitat known to occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat likely to occur within area
Angophora inopina Charmhaven Apple [64832]	Vulnerable	Species or species habitat known to occur within area
Anthosachne kingiana subsp. kingiana Phillip Island Wheat Grass [87946]	Critically Endangered	Species or species habitat likely to occur within area
Asterolasia elegans [56780]	Endangered	Species or species habitat may occur within area
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat known to occur within area
Banksia vincentia [88276]	Critically 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 known to occur within area
Correa baeuerlenii Chef's Cap [17007]	Vulnerable	Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text
Corunastylis rhyolitica listed as Genoplesium rhyolicum 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
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 likely to occur within area
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to 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
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may 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 known to occur within area

Scientific Name	Threatened Category	Presence Text
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat may occur within area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat known to occur within area
Grevillea raybrownii [65665]	Vulnerable	Species or species habitat may occur within area
Grevillea shiressii [19186]	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
Haloragodendron lucasii Hal [6480]	Endangered	Species or species habitat may occur within area
Irenepharsus trypherus Delicate Cress, Illawarra Irene [14664]	Endangered	Species or species habitat may occur within area
Lasiopetalum joyceae [20311]	Vulnerable	Species or species habitat may occur within area
Leionema ralstonii [64926]	Vulnerable	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
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	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]	Vulnerable	Species or species habitat may occur within area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to 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
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat likely to occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat known to occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat likely 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

Scientific Name	Threatened Category	Presence Text
Prasophyllum affine Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat known to occur within area
Prostanthera askania Tranquillity Mintbush, Tranquillity Mintbush [64958]	Endangered	Species or species habitat likely to occur within area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	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
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Rutidosia heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat known to 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
Tetraloche 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
Triplarina nowraensis Nowra Heath-myrtle [64544]	Endangered	Species or species habitat known to occur within area
Westringia davidii [19079]	Vulnerable	Species or species habitat may occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area
Zieria granulata Hill Zieria, Hilly Zieria, Illawarra Zieria [17147]	Endangered	Species or species habitat likely to occur within area
Zieria tuberculata Warty Zieria [56736]	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
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	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]	Vulnerable	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
Oligosoma lichenigerum Lord Howe Island Skink [91467]	Vulnerable	Species or species habitat likely to occur within area
SHARK		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat 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 listed as Centrophorus zeehaani 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
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 may occur within area
Meridolum maryae Maroubra Woodland Snail, Maroubra Land Snail [89884]	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 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
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

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]		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	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 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
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
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		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	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	Species or species habitat 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 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

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	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
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
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

Scientific Name	Threatened Category	Presence Text
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 alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Breeding known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	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]		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]		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]		Roosting 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
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		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]		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]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Xenus cinereus		
Terek Sandpiper [59300]		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 [12024]	NSW
Commonwealth Land - Australian National University [12023]	NSW
Commonwealth Land - Australian National University [12022]	NSW
Commonwealth Land - Australian National University [12021]	NSW
Commonwealth Land - Australian National University [13156]	NSW
Commonwealth Land - Australian National University [15737]	NSW
Commonwealth Bank of Australia	
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 [11726]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12017]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12224]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14325]	NSW

Commonwealth Land Name	State
Commonwealth Land - Commonwealth Trading Bank of Australia [12203]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12202]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12020]	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 [12222]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [14337]	NSW
Communications, Information Technology and the Arts - Australian Broadcasting Corporation	
Commonwealth Land - Australian Broadcasting Corporation [15511]	NSW
Communications, Information Technology and the Arts - Australian Postal Corporation	
Commonwealth Land - Australian Postal Commission [11724]	NSW
Commonwealth Land - Australian Postal Commission [13291]	NSW
Commonwealth Land - Australian Postal Commission [11728]	NSW
Commonwealth Land - Australian Postal Commission [14391]	NSW
Commonwealth Land - Australian Postal Commission [12016]	NSW
Commonwealth Land - Australian Postal Commission [12225]	NSW
Commonwealth Land - Australian Postal Commission [11730]	NSW
Commonwealth Land - Australian Postal Commission [14324]	NSW
Commonwealth Land - Australian Postal Commission [16431]	NSW
Commonwealth Land - Australian Postal Commission [16105]	NSW
Commonwealth Land - Australian Postal Commission [14326]	NSW
Commonwealth Land - Australian Postal Commission [12052]	NSW
Commonwealth Land - Australian Postal Commission [12205]	NSW
Commonwealth Land - Australian Postal Commission [14329]	NSW
Commonwealth Land - Australian Postal Commission [14350]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Postal Commission [15537]	NSW
Commonwealth Land - Australian Postal Commission [15538]	NSW
Commonwealth Land - Australian Postal Commission [11729]	NSW
Commonwealth Land - Australian Postal Commission [14355]	NSW
Commonwealth Land - Australian Postal Commission [13290]	NSW
Commonwealth Land - Australian Postal Commission [14338]	NSW
Commonwealth Land - Australian Postal Commission [11710]	NSW
Commonwealth Land - Australian Postal Commission [13153]	NSW
Commonwealth Land - Australian Postal Commission [11669]	NSW
Commonwealth Land - Australian Postal Commission [14284]	NSW
Commonwealth Land - Australian Postal Commission [11893]	NSW
Commonwealth Land - Australian Postal Commission [14280]	NSW
Commonwealth Land - Australian Postal Commission [14366]	NSW
Commonwealth Land - Australian Postal Commission [12078]	NSW
Commonwealth Land - Australian Postal Corporation [16009]	NSW
Commonwealth Land - Australian Postal Corporation [14343]	NSW
Commonwealth Land - Australian Postal Corporation [14342]	NSW
Commonwealth Land - Australian Postal Corporation [12227]	NSW
Commonwealth Land - Australian Postal Corporation [12073]	NSW
Commonwealth Land - Australian Postal Corporation [12207]	NSW
Commonwealth Land - Australian Postal Corporation [12226]	NSW
Commonwealth Land - Australian Postal Corporation [16021]	NSW
Commonwealth Land - Australian Postal Corporation [13152]	NSW
Commonwealth Land - Australian Postal Corporation [11771]	NSW
Commonwealth Land - Australian Postal Corporation [12072]	NSW
Communications, Information Technology and the Arts - Telstra Corporation Limited	
Commonwealth Land - Australian & Overseas Telecommunications Corporation [14359]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian & Overseas Telecommunications Corporation [13155]	NSW
Commonwealth Land - Australian Telecommunications Commission [11727]	NSW
Commonwealth Land - Australian Telecommunications Commission [12215]	NSW
Commonwealth Land - Australian Telecommunications Commission [13293]	NSW
Commonwealth Land - Australian Telecommunications Commission [11722]	NSW
Commonwealth Land - Australian Telecommunications Commission [11723]	NSW
Commonwealth Land - Australian Telecommunications Commission [11888]	NSW
Commonwealth Land - Australian Telecommunications Commission [15611]	NSW
Commonwealth Land - Australian Telecommunications Commission [15430]	NSW
Commonwealth Land - Australian Telecommunications Commission [12014]	NSW
Commonwealth Land - Australian Telecommunications Commission [12015]	NSW
Commonwealth Land - Australian Telecommunications Commission [12010]	NSW
Commonwealth Land - Australian Telecommunications Commission [12036]	NSW
Commonwealth Land - Australian Telecommunications Commission [16089]	NSW
Commonwealth Land - Australian Telecommunications Commission [14379]	NSW
Commonwealth Land - Australian Telecommunications Commission [12037]	NSW
Commonwealth Land - Australian Telecommunications Commission [12038]	NSW
Commonwealth Land - Australian Telecommunications Commission [14327]	NSW
Commonwealth Land - Australian Telecommunications Commission [12058]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [12059]	NSW
Commonwealth Land - Australian Telecommunications Commission [12050]	NSW
Commonwealth Land - Australian Telecommunications Commission [12053]	NSW
Commonwealth Land - Australian Telecommunications Commission [12025]	NSW
Commonwealth Land - Australian Telecommunications Commission [11715]	NSW
Commonwealth Land - Australian Telecommunications Commission [11714]	NSW
Commonwealth Land - Australian Telecommunications Commission [11717]	NSW
Commonwealth Land - Australian Telecommunications Commission [11716]	NSW
Commonwealth Land - Australian Telecommunications Commission [11719]	NSW
Commonwealth Land - Australian Telecommunications Commission [11718]	NSW
Commonwealth Land - Australian Telecommunications Commission [12223]	NSW
Commonwealth Land - Australian Telecommunications Commission [14351]	NSW
Commonwealth Land - Australian Telecommunications Commission [12008]	NSW
Commonwealth Land - Australian Telecommunications Commission [15535]	NSW
Commonwealth Land - Australian Telecommunications Commission [12221]	NSW
Commonwealth Land - Australian Telecommunications Commission [11853]	NSW
Commonwealth Land - Australian Telecommunications Commission [13162]	NSW
Commonwealth Land - Australian Telecommunications Commission [14356]	NSW
Commonwealth Land - Australian Telecommunications Commission [11713]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [12265]	NSW
Commonwealth Land - Australian Telecommunications Commission [13194]	NSW
Commonwealth Land - Australian Telecommunications Commission [13154]	NSW
Commonwealth Land - Australian Telecommunications Commission [13157]	NSW
Commonwealth Land - Australian Telecommunications Commission [11887]	NSW
Commonwealth Land - Australian Telecommunications Commission [11889]	NSW
Commonwealth Land - Australian Telecommunications Commission [11668]	NSW
Commonwealth Land - Australian Telecommunications Commission [16473]	NSW
Commonwealth Land - Australian Telecommunications Commission [14281]	NSW
Commonwealth Land - Australian Telecommunications Commission [14285]	NSW
Commonwealth Land - Australian Telecommunications Commission [11892]	NSW
Commonwealth Land - Australian Telecommunications Commission [12246]	NSW
Commonwealth Land - Australian Telecommunications Commission [15461]	NSW
Commonwealth Land - Australian Telecommunications Commission [11894]	NSW
Commonwealth Land - Australian Telecommunications Commission [11674]	NSW
Commonwealth Land - Australian Telecommunications Commission [14279]	NSW
Commonwealth Land - Australian Telecommunications Commission [14381]	NSW
Commonwealth Land - Australian Telecommunications Commission [12040]	NSW
Commonwealth Land - Australian Telecommunications Corporation [13292]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Corporation [14286]	NSW
Commonwealth Land - Telstra Corporation Limited [14349]	NSW
Commonwealth Land - Telstra Corporation Limited [12039]	NSW
Commonwealth Land - Telstra Corporation Limited [12051]	NSW
Commonwealth Land - Telstra Corporation Limited [12204]	NSW
Commonwealth Land - Telstra Corporation Limited [15407]	NSW
Commonwealth Land - Telstra Corporation Limited [15536]	NSW
Commonwealth Land - Telstra Corporation Limited [14332]	NSW
Commonwealth Land - Telstra Corporation Limited [14333]	NSW
Commonwealth Land - Telstra Corporation Limited [11711]	NSW
Commonwealth Land - Telstra Corporation Limited [12076]	NSW
Commonwealth Land - Telstra Corporation Limited [14287]	NSW
Commonwealth Land - Telstra Corporation Limited [14282]	NSW
Commonwealth Land - Telstra Corporation Limited [14283]	NSW
Commonwealth Land - Telstra Corporation Limited [15888]	NSW
Commonwealth Land - Telstra Corporation Limited [14368]	NSW
Commonwealth Land - Telstra Corporation Limited [12075]	NSW
Defence	
Commonwealth Land - Defence Service Homes Corporation [12217]	NSW
Commonwealth Land - Defence Service Homes Corporation [14363]	NSW
Commonwealth Land - Defence Service Homes Corporation [14357]	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 [14352]	NSW
Commonwealth Land - Defence Service Homes Corporation [14360]	NSW
Commonwealth Land - Defence Service Homes Corporation [11670]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Service Homes Corporation & Alice Isabel Patterson [14377]	NSW
Defence - AIRTC WOLLONGONG [10002]	NSW
Defence - AIRTC WOLLONGONG [10001]	NSW
Defence - BANKSMEADOW DEPOT (Sydney Workshop Company) [11116]	NSW
Defence - BANKSMEADOW DEPOT (Sydney Workshop Company) [11117]	NSW
Defence - BEECROFT RAPIER RANGE [10052]	NSW
Defence - BEECROFT RAPIER RANGE [10050]	NSW
Defence - BEECROFT RAPIER RANGE [10051]	NSW
Defence - BEECROFT RAPIER RANGE [10049]	NSW
Defence - BEECROFT RAPIER RANGE [10048]	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 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

Commonwealth Land Name	State
Defence - JENNER BUILDING [10034]	NSW
Defence - KENSINGTON DEPOT [11110]	NSW
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 [10033]	NSW
Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA [10032]	NSW
Defence - MARITIME HEADQUARTERS [11178]	NSW
Defence - MILLER'S POINT TRAINING DEPOT [11118]	NSW
Defence - OXFORD ST SYDNEY [11168]	NSW
Defence - OXFORD ST SYDNEY [11169]	NSW
Defence - OXFORD ST SYDNEY [11165]	NSW
Defence - OXFORD ST SYDNEY [11164]	NSW
Defence - OXFORD ST SYDNEY [11167]	NSW
Defence - OXFORD ST SYDNEY [11166]	NSW
Defence - PARKVIEW BUILDING - SYDNEY [11170]	NSW
Defence - RANDWICK (CARRINGTON RD) [11132]	NSW
Defence - RANDWICK (CARRINGTON RD) [11133]	NSW
Defence - RANDWICK (CARRINGTON RD) [11134]	NSW
Defence - RANDWICK (CARRINGTON RD) [11135]	NSW
Defence - RANDWICK BARRACKS [11131]	NSW
Defence - RANDWICK BARRACKS [11126]	NSW
Defence - RANDWICK BARRACKS [11125]	NSW
Defence - RANDWICK BARRACKS [11127]	NSW

Commonwealth Land Name	State
Defence - RANDWICK BARRACKS [11124]	NSW
Defence - RANDWICK BARRACKS [11129]	NSW
Defence - RANDWICK BARRACKS [11128]	NSW
Defence - RANDWICK BARRACKS [11130]	NSW
Defence - RANDWICK FRENCHMANS TRG [11163]	NSW
Defence - RANDWICK FRENCHMANS TRG [11162]	NSW
Defence - ROCKDALE TRAINING DEPOT [11111]	NSW
Defence - SUSSEX INLET - DEFENCE RESERVE [11233]	NSW
Defence - THROSBY TRG DEPOT-PORT KEMBLA [10056]	NSW
Defence - TRESKO [10044]	NSW
Defence - TS ALBATROSS-WOLLONGONG [10148]	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
Defence - WOLLONGONG MULTI-USER DEPOT [11209]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11176]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11175]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11177]	NSW
Defence - WOOLLOOMOOLOO CARPARK [11174]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11089]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11081]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11088]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11086]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11087]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11084]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11085]	NSW

Commonwealth Land Name	State
Defence - ZETLAND NAVY SUPPLY CENTRE [11082]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11083]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11080]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11090]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11091]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11092]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11077]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11076]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11075]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11078]	NSW
Defence - ZETLAND NAVY SUPPLY CENTRE [11079]	NSW
Defence - Defence Housing Authority	
Commonwealth Land - Defence Housing Authority [12216]	NSW
Commonwealth Land - Defence Housing Authority [12210]	NSW
Commonwealth Land - Defence Housing Authority [12213]	NSW
Commonwealth Land - Defence Housing Authority [12212]	NSW
Commonwealth Land - Defence Housing Authority [12214]	NSW
Commonwealth Land - Defence Housing Authority [15596]	NSW
Commonwealth Land - Defence Housing Authority [15756]	NSW
Commonwealth Land - Defence Housing Authority [15754]	NSW
Commonwealth Land - Defence Housing Authority [14308]	NSW
Commonwealth Land - Defence Housing Authority [15757]	NSW
Commonwealth Land - Defence Housing Authority [15751]	NSW
Commonwealth Land - Defence Housing Authority [15753]	NSW
Commonwealth Land - Defence Housing Authority [14450]	NSW
Commonwealth Land - Defence Housing Authority [14304]	NSW
Commonwealth Land - Defence Housing Authority [15750]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [15963]	NSW
Commonwealth Land - Defence Housing Authority [13286]	NSW
Commonwealth Land - Defence Housing Authority [14345]	NSW
Commonwealth Land - Defence Housing Authority [14344]	NSW
Commonwealth Land - Defence Housing Authority [14347]	NSW
Commonwealth Land - Defence Housing Authority [14346]	NSW
Commonwealth Land - Defence Housing Authority [12209]	NSW
Commonwealth Land - Defence Housing Authority [13289]	NSW
Commonwealth Land - Defence Housing Authority [13288]	NSW
Commonwealth Land - Defence Housing Authority [12035]	NSW
Commonwealth Land - Defence Housing Authority [12034]	NSW
Commonwealth Land - Defence Housing Authority [12033]	NSW
Commonwealth Land - Defence Housing Authority [16470]	NSW
Commonwealth Land - Defence Housing Authority [15718]	NSW
Commonwealth Land - Defence Housing Authority [15413]	NSW
Commonwealth Land - Defence Housing Authority [14315]	NSW
Commonwealth Land - Defence Housing Authority [14317]	NSW
Commonwealth Land - Defence Housing Authority [12067]	NSW
Commonwealth Land - Defence Housing Authority [14320]	NSW
Commonwealth Land - Defence Housing Authority [14321]	NSW
Commonwealth Land - Defence Housing Authority [12208]	NSW
Commonwealth Land - Defence Housing Authority [15749]	NSW
Commonwealth Land - Defence Housing Authority [13186]	NSW
Commonwealth Land - Defence Housing Authority [15755]	NSW
Commonwealth Land - Defence Housing Authority [15752]	NSW
Commonwealth Land - Defence Housing Authority [16456]	NSW
Commonwealth Land - Defence Housing Authority [16457]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [16454]	NSW
Commonwealth Land - Defence Housing Authority [16455]	NSW
Commonwealth Land - Defence Housing Authority [16189]	NSW
Commonwealth Land - Defence Housing Authority [16458]	NSW
Commonwealth Land - Defence Housing Authority [16459]	NSW
Commonwealth Land - Defence Housing Authority [16453]	NSW
Commonwealth Land - Defence Housing Authority [14330]	NSW
Commonwealth Land - Defence Housing Authority [14539]	NSW
Commonwealth Land - Defence Housing Authority [15959]	NSW
Commonwealth Land - Defence Housing Authority [14298]	NSW
Commonwealth Land - Defence Housing Authority [14299]	NSW
Commonwealth Land - Defence Housing Authority [16122]	NSW
Commonwealth Land - Defence Housing Authority [12061]	NSW
Commonwealth Land - Defence Housing Authority [16028]	NSW
Commonwealth Land - Defence Housing Authority [12211]	NSW
Commonwealth Land - Defence Housing Authority [16461]	NSW
Commonwealth Land - Defence Housing Authority [16466]	NSW
Commonwealth Land - Defence Housing Authority [14307]	NSW
Commonwealth Land - Defence Housing Authority [14306]	NSW
Commonwealth Land - Defence Housing Authority [14309]	NSW
Commonwealth Land - Defence Housing Authority [15948]	NSW
Commonwealth Land - Defence Housing Authority [14302]	NSW
Commonwealth Land - Defence Housing Authority [14305]	NSW
Commonwealth Land - Defence Housing Authority [14297]	NSW
Commonwealth Land - Defence Housing Authority [14290]	NSW
Commonwealth Land - Defence Housing Authority [14291]	NSW
Commonwealth Land - Defence Housing Authority [14292]	NSW

Commonwealth Land Name	State
Commonwealth Land - Defence Housing Authority [14293]	NSW
Commonwealth Land - Defence Housing Authority [14296]	NSW
Commonwealth Land - Defence Housing Authority [12077]	NSW
Commonwealth Land - Defence Housing Authority [14295]	NSW
Commonwealth Land - Defence Housing Authority [14294]	NSW
Commonwealth Land - Defence Housing Authority [14288]	NSW
Commonwealth Land - Defence Housing Authority [14289]	NSW
Commonwealth Land - Defence Housing Authority [15414]	NSW
Commonwealth Land - Defence Housing Authority [15886]	NSW
Commonwealth Land - Defence Housing Authority [15881]	NSW
Commonwealth Land - Defence Housing Authority [15885]	NSW
Commonwealth Land - Defence Housing Authority [15884]	NSW
Commonwealth Land - Defence Housing Authority [15969]	NSW
Commonwealth Land - Defence Housing Authority [12084]	NSW
Commonwealth Land - Defence Housing Authority [12085]	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 [12062]	NSW
Commonwealth Land - Defence Housing Authority [12063]	NSW
Commonwealth Land - Defence Housing Authority [12060]	NSW
Commonwealth Land - Defence Housing Authority [16175]	NSW
Commonwealth Land - Defence Housing Authority [16176]	NSW
Commonwealth Land - Defence Housing Authority [16177]	NSW
Commonwealth Land - Defence Housing Authority [12088]	NSW
Commonwealth Land - Defence Housing Authority [16178]	NSW
Commonwealth Land - Defence Housing Authority [14362]	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 [16463]	NSW
Commonwealth Land - Defence Housing Authority [16467]	NSW
Commonwealth Land - Defence Housing Authority [16469]	NSW
Commonwealth Land - Defence Housing Authority [16465]	NSW
Commonwealth Land - Defence Housing Authority [14300]	NSW
Commonwealth Land - Defence Housing Authority [14303]	NSW
Commonwealth Land - Defence Housing Authority [14316]	NSW
Commonwealth Land - Defence Housing Authority [14319]	NSW
Commonwealth Land - Defence Housing Authority [14318]	NSW
Commonwealth Land - Defence Housing Authority [14314]	NSW
Commonwealth Land - Defence Housing Authority [14313]	NSW
Commonwealth Land - Defence Housing Authority [14312]	NSW
Commonwealth Land - Defence Housing Authority [14311]	NSW
Commonwealth Land - Defence Housing Authority [16062]	NSW
Commonwealth Land - Defence Housing Authority [15918]	NSW
Commonwealth Land - Defence Housing Authority [15441]	NSW
Commonwealth Land - Defence Housing Authority [14380]	NSW
Commonwealth Land - Director of War Service Homes [11725]	NSW
Commonwealth Land - Director of War Service Homes [11720]	NSW
Commonwealth Land - Director of War Service Homes [12032]	NSW
Commonwealth Land - Director of War Service Homes [12206]	NSW
Commonwealth Land - Director of War Service Homes [11712]	NSW
Commonwealth Land - Director of War Service Homes [14358]	NSW

Commonwealth Land Name	State
Commonwealth Land - Director of War Service Homes [11664]	NSW
Commonwealth Land - Director of War Service Homes [12068]	NSW
Commonwealth Land - Director of War Service Homes [14361]	NSW
Commonwealth Land - Director of War Service Homes [14367]	NSW
Defence - Royal Australian Navy Central Canteens Board	
Commonwealth Land - Royal Australian Navy Central Canteens Board [12018]	NSW
Environment and Heritage	
Commonwealth Land - Booderee National Park [91003]	JBT
Commonwealth Land - Booderee National Park [91001]	JBT
Commonwealth Land - Booderee National Park [91005]	JBT
Commonwealth Land - Booderee National Park [91004]	JBT
Commonwealth Land - Booderee National Park [91002]	JBT
Transport and Regional Services - Airservices Australia	
Commonwealth Land - Airservices Australia [12057]	NSW
Treasury - Reserve Bank of Australia	
Commonwealth Land - Reserve Bank of Australia [16499]	NSW
Commonwealth Land - Reserve Bank of Australia [13160]	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 [13149]	NSW
Commonwealth Land - Reserve Bank of Australia [13148]	NSW
Unknown	
Commonwealth Land - [14397]	NSW
Commonwealth Land - [14396]	NSW
Commonwealth Land - [14394]	NSW
Commonwealth Land - [13161]	NSW
Commonwealth Land - [12231]	NSW
Commonwealth Land - [12232]	NSW

Commonwealth Land Name	State
Commonwealth Land - [14399]	NSW
Commonwealth Land - [14398]	NSW
Commonwealth Land - [14393]	NSW
Commonwealth Land - [14392]	NSW
Commonwealth Land - [14395]	NSW
Commonwealth Land - [15434]	NSW
Commonwealth Land - [15503]	NSW
Commonwealth Land - [15435]	NSW
Commonwealth Land - [15436]	NSW
Commonwealth Land - [13287]	NSW
Commonwealth Land - [15690]	NSW
Commonwealth Land - [15459]	NSW
Commonwealth Land - [13285]	NSW
Commonwealth Land - [14401]	NSW
Commonwealth Land - [14373]	NSW
Commonwealth Land - [11160]	NSW
Commonwealth Land - [16159]	NSW
Commonwealth Land - [14370]	NSW
Commonwealth Land - [14378]	NSW
Commonwealth Land - [12219]	NSW
Commonwealth Land - [14371]	NSW
Commonwealth Land - [14372]	NSW
Commonwealth Land - [12218]	NSW
Commonwealth Land - [14354]	NSW
Commonwealth Land - [13219]	NSW
Commonwealth Land - [13218]	NSW
Commonwealth Land - [14375]	NSW

Commonwealth Land Name	State
Commonwealth Land - [14374]	NSW
Commonwealth Land - [14376]	NSW
Commonwealth Land - [14353]	NSW
Commonwealth Land - [11721]	NSW
Commonwealth Land - [12220]	NSW
Commonwealth Land - [15406]	NSW
Commonwealth Land - [13165]	NSW
Commonwealth Land - [13163]	NSW
Commonwealth Land - [16452]	NSW
Commonwealth Land - [14336]	NSW
Commonwealth Land - [14400]	NSW
Commonwealth Land - [14334]	NSW
Commonwealth Land - [14335]	NSW
Commonwealth Land - [12041]	NSW
Commonwealth Land - [12045]	NSW
Commonwealth Land - [12046]	NSW
Commonwealth Land - [12047]	NSW
Commonwealth Land - [16562]	NSW
Commonwealth Land - [13139]	NSW
Commonwealth Land - [15410]	NSW
Commonwealth Land - [15883]	NSW
Commonwealth Land - [15882]	NSW
Commonwealth Land - [16116]	NSW
Commonwealth Land - [13145]	NSW
Commonwealth Land - [13147]	NSW
Commonwealth Land - [13144]	NSW
Commonwealth Land - [13143]	NSW

Commonwealth Land Name	State
Commonwealth Land - [13146]	NSW
Commonwealth Land - [13142]	NSW
Commonwealth Land - [14364]	NSW
Commonwealth Land - [14365]	NSW
Commonwealth Land - [15729]	NSW
Commonwealth Land - [16283]	NSW
Commonwealth Land - [14369]	NSW
Commonwealth Land - [15689]	NSW
Commonwealth Land - [15688]	NSW
Commonwealth Land - [16161]	NSW
Commonwealth Land - [16160]	NSW
Commonwealth Land - [14301]	NSW
Commonwealth Land - [14310]	NSW
Commonwealth Land - [12042]	NSW
Commonwealth Land - [14382]	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
Bondi Beach Post Office	NSW	Listed place
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

Name	State	Status
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
Christians Minde Settlement	ACT	Listed place
Cliff House	NSW	Listed place
Cottage at Macquarie Lighthouse	NSW	Listed place
Cronulla Post Office	NSW	Listed place
Customs Marine Centre	NSW	Listed place
Factory	NSW	Listed place
Garden Island Precinct	NSW	Listed place
Gazebo	NSW	Listed place
General Post Office	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
Montague Island Lighthouse	NSW	Listed place

Name	State	Status
Naval Store	NSW	Listed place
North Head Artillery Barracks	NSW	Listed place
Office Building	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
School of Musketry and Officers Mess, Randwick Army Barracks	NSW	Listed place
Shark Point Battery	NSW	Listed place
Sydney Airport Air Traffic Control Tower	NSW	Listed place
Sydney Customs House (former)	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
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
Malabar Headland	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

Scientific Name	Threatened Category	Presence Text
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
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]		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]		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]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	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
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]	Critically Endangered	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
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 known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		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 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]		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
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
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]		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
Philomachus pugnax Ruff (Reeve) [850]		Species or species habitat known to occur within area overfly marine area
Phoebastria 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]		Roosting known to occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
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]		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

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 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
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat 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
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]		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]		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]		Roosting known to occur within area overfly marine area
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

Scientific Name	Threatened Category	Presence Text
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
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		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 minotaur Bullneck Seahorse [66705]		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

Scientific Name	Threatened Category	Presence Text
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solegnathus dunckeri Duncker's Pipehorse [66271]		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
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
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
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
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout 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
Dugong dugon Dugong [28]		Species or species habitat may 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
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
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	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 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
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
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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 Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon 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

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
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

Name	State	Type
Booderee	JBT	National Park (Commonwealth)
Booderee	JBT	Botanic Gardens (Commonwealth)

Australian Marine Parks [\[Resource Information \]](#)

Park Name	Zone & IUCN Categories
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)
East Gippsland	Multiple Use Zone (IUCN VI)
Lord Howe	Multiple Use Zone (IUCN VI)
Lord Howe	National Park Zone (IUCN II)
Lord Howe	Recreational Use Zone (IUCN IV)
Hunter	Special Purpose Zone (Trawl) (IUCN VI)
Jervis	Special Purpose Zone (Trawl) (IUCN VI)

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State
Awabakal	Nature Reserve	NSW
Barren Grounds	Nature Reserve	NSW
Batemans	Marine Park	NSW
Bell Bird Creek	Nature Reserve	NSW
Belowla Island	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Ben Boyd	National Park	NSW
Berkeley	Nature Reserve	NSW
Bermagabee	Nature Reserve	NSW
Bermagui	Flora Reserve	NSW
Biamanga	National Park	NSW
Bird Island	Nature Reserve	NSW
Boat Harbour	Aquatic Reserve	NSW
Bournda	Nature Reserve	NSW
Bournda	National Park	NSW
Bronte-Coogee	Aquatic Reserve	NSW
Broulee Island	Nature Reserve	NSW
Brush Island	Nature Reserve	NSW
Bushrangers Bay	Aquatic Reserve	NSW
Cabbage Tree Bay	Aquatic Reserve	NSW
Cape Banks	Aquatic Reserve	NSW
Cape Howe	Wilderness Zone	VIC
Cape Howe	Marine National Park	VIC
Clyde River	National Park	NSW
Colongra Swamp	Nature Reserve	NSW
Comerong Island	Nature Reserve	NSW
Conjola	National Park	NSW
Corramy	Regional Park	NSW
Croajingolong	National Park	VIC
Cullendulla Creek	Nature Reserve	NSW
Dharawal	Nature Reserve	NSW
Dharawal	National Park	NSW
Eagles Claw	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Eurobodalla	National Park	NSW
Five Islands	Nature Reserve	NSW
Garawarra	State Conservation Area	NSW
Glenrock	State Conservation Area	NSW
Gulaga	National Park	NSW
Heathcote	National Park	NSW
Illawarra Escarpment	State Conservation Area	NSW
Illawong	Nature Reserve	NSW
Jervis Bay	National Park	NSW
Jervis Bay	Marine Park	NSW
Kamay Botany Bay	National Park	NSW
Lake Macquarie	State Conservation Area	NSW
Lord Howe Island	Permanent Park Preserve	NSW
Lord Howe Island	Marine Park	NSW
Malabar Headland	National Park	NSW
Meroo	National Park	NSW
Mimosa Rocks	National Park	NSW
Montague Island	Nature Reserve	NSW
Moon Island	Nature Reserve	NSW
Mumbulla	Flora Reserve	NSW
Munmorah	State Conservation Area	NSW
Murrah	Flora Reserve	NSW
Murramarang	National Park	NSW
Nadgee	Nature Reserve	NSW

Protected Area Name	Reserve Type	State
Nameless Sylvan	Conservation Reserve	NSW
Narrawallee Creek	Nature Reserve	NSW
North Head	Private Nature Reserve	NSW
North Sydney Harbour	Aquatic Reserve	NSW
Royal	National Park	NSW
Seven Mile Beach	National Park	NSW
Shiprock	Aquatic Reserve	NSW
South East Forest	National Park	NSW
Sydney Harbour	National Park	NSW
Tanja	Flora Reserve	NSW
Tingira Heights	Nature Reserve	NSW
Tollgate Islands	Nature Reserve	NSW
Towra Point	Nature Reserve	NSW
Towra Point	Aquatic Reserve	NSW
Wallarah	National Park	NSW
Wamberal Lagoon	Nature Reserve	NSW
Wambina	Nature Reserve	NSW
Wolli Creek	Regional Park	NSW
Woollamia	Nature Reserve	NSW
Wyrrabalong	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
East Gippsland RFA	Victoria
Eden RFA	New South Wales
North East NSW RFA	New South Wales

RFA Name	State
Southern RFA	New South Wales

Nationally Important Wetlands	[Resource Information]
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Wetland Name	State
Beecroft Peninsula	NSW
Bondi Lake	NSW
Botany Wetlands	NSW
Clyde River Estuary	NSW
Coila Creek Delta	NSW
Colongra Swamp	NSW
Coomaditchy Lagoon	NSW
Coomonderry Swamp	NSW
Cormorant Beach	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
Lagoon Head	NSW
Lake Illawarra	NSW
Lake Macquarie	NSW
Merimbula Lake	NSW
Meroo Lake Wetland Complex	NSW
Minnamurra River Estuary	NSW
Moruya River Estuary Saltmarshes	NSW

Wetland Name	State
Nadgee Lake and tributary wetlands	NSW
Nargal Lake	NSW
Nelson Lagoon	NSW
O'Hares Creek Catchment	NSW
Pambula Estuarine Wetlands	NSW
Shoalhaven/Crookhaven Estuary	NSW
St Georges Basin	NSW
Swan Lagoon	NSW
Tabourie Lake	NSW
Termeil Lake Wetland Complex	NSW
Terrigal Lagoon	NSW
Towra Point Estuarine Wetlands	NSW
Tuggerah Lake	NSW
Tuross River Estuary	NSW
Twofold Bay	NSW
Waldrons Swamp	NSW
Wallaga Lake	NSW
Wallagoot Lagoon (Wallagoot Lake)	NSW
Wamberal Lagoon	NSW
Wollumboola Lake	NSW

EPBC Act Referrals [[Resource Information](#)]

Title of referral	Reference	Referral Outcome	Assessment Status
Albion Park Rail Bypass, NSW	2017/7909		Post-Approval
Bermagui Golf Club Proposed Subdivision (Stages 3-8)	2022/09242		Post-Approval
Broulee Beach Estate residential development subdivision	2023/09551		Referral Decision
Dendrobium Mine Extension Project	2021/9115		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Dunmore Hard Rock Quarry Modification 13	2022/09319		Assessment
Dunmore Lakes Sand Project Modification 2 Pond 5B extraction	2023/09552		Completed
Eastern Rise Offshore Wind Project	2023/09544		Referral Decision
Eastern Rise Offshore Wind Project Initial Marine Field Investigations	2023/09555		Referral Decision
Eurobodalla Regional Hospital	2023/09506		Referral Decision
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
Controlled action			
Albion Park Quarry Extraction Area Stage 7 Extension	2020/8871	Controlled Action	Assessment Approach
Australian Institute of Police Management Facilities Upgrade	2006/2746	Controlled Action	Post-Approval
Callala Bay Residential Development	2020/8637	Controlled Action	Post-Approval
Construction and operation of the Westconnex New M5, Sydney, NSW	2015/7520	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
Garden Island Hammerhead Crane Proposed Removal, NSW	2012/6430	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Kurnell Sand Extraction and Backfilling Proposal	2002/631	Controlled Action	Completed
Lord Howe Island Rodent Eradication Project, NSW	2016/7703	Controlled Action	Post-Approval
Moriah War Memorial College expansion	2002/575	Controlled Action	Post-Approval
North Manyana Subdivision, NSW	2021/8948	Controlled Action	Further Information Request
Pilot Offshore Artificial Reefs	2008/4176	Controlled Action	Post-Approval
Protech Cold Mill Facility	2001/274	Controlled Action	Post-Approval
Relocation of Grey-Headed Flying-Fox Colony	2008/4646	Controlled Action	Post-Approval
Residential development, 11 Jennifer Street, Little Bay, NSW	2018/8170	Controlled Action	Further Information Request
Residential Development, Lot 172 DP 755923 and Lot 823 DP 247285, Manyana, NSW	2020/8704	Controlled Action	Final PD
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
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	2003/946	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Beach			
Subdivide and Develop	2008/4419	Controlled Action	Post-Approval
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
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
Wyndham Way Eleebana Residential Subdivision	2017/7931	Controlled Action	Post-Approval
Not controlled action			
Admiralty House, Kirribilli, foreshore works, NSW	2014/7357	Not Controlled Action	Completed
APX-East sub-sea telecommunications & data cable system	2014/7139	Not Controlled Action	Completed
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
Biodiversity Impacts Audit	2011/6191	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Caswell Street - Moruya East	2020/8781	Not Controlled Action	Completed
Clearance of native vegetation to create fire breaks	2004/1534	Not Controlled Action	Completed
Conservation and Adaptive Use of Quarantine Station	2002/556	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
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed
Demolition of the existing club house and construction of a new club house	2009/4932	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
Dredging of Tuross Lake channel and depositon of spoil in lake	2004/1554	Not Controlled Action	Completed
Duke Cogeneration Plant Port Kembla	2001/179	Not Controlled Action	Completed
Eden Wind Farm	2011/6037	Not Controlled Action	Completed
Environmental Works	2001/396	Not Controlled Action	Completed
Expansion of Marmong Point Marina	2008/4277	Not Controlled Action	Completed
Extension of Hale Street to Foreshore Road and Associated Works	2008/4035	Not Controlled Action	Completed
Extension to Lucas Heights production building	2003/1114	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
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
Georges River Program 2	2003/999	Not Controlled Action	Completed
Golf Course Extension	2001/215	Not Controlled Action	Completed
Hunter Natural Gas Pipeline	2004/1902	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 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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lake Illawarra entrance works, Stage 2	2004/1696	Not Controlled Action	Completed
Little Bay Residential Subdivision	2002/873	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 - continuataion, 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
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
Optus mobiles telecommunications base station facility, BlueScope Steel, Lot 1 Five Islands Rd, Port	2013/7014	Not Controlled Action	Completed
Princes Highway Upgrade, NSW	2013/6968	Not Controlled Action	Completed
Rabbit Control Anzac Rifle Range	2005/1940	Not Controlled Action	Completed
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
Retail development, Lots 10-14, South Street, Windale, NSW	2013/7031	Not Controlled Action	Completed
Road interchange	2002/592	Not Controlled Action	Completed
RTA Five Islands Road Upgrade	2000/44	Not Controlled Action	Completed
Rubbish removal, Anzac Rifle Range	2002/760	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
Sandon Point Residential Development	2001/458	Not Controlled Action	Completed
sewage treatment 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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
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
Torpedo Factory Renewal Project	2020/8847	Not Controlled Action	Completed
Undertake a controlled burn of the Eastern Suburbs Banksia Scrub at Byrne Cresce	2004/1728	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
Valentine Substation	2005/1961	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
Whytes Gully New Landfill Cell Project, Kembla Grange, NSW	2013/6712	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 Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular 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
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
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
Inspection of project vessels for presence of invasive marine pests in Commonwealth waters off Victo	2012/6362	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		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
Kingsford Defence Land Subdivision and Redevelopment	2002/852	Not Controlled Action (Particular Manner)	Post-Approval
Lake Illawarra Entrance Works (stage 2)	2005/1997	Not Controlled Action (Particular Manner)	Post-Approval
Magenta Shared Pathway Stage 2, NSW	2017/7926	Not Controlled Action (Particular Manner)	Post-Approval
Moriah Primary School, Centennial Park, Sydney	2004/1676	Not Controlled Action (Particular Manner)	Post-Approval
Multipurpose Centre Dora St Lot 122 DP 881828 Morisset	2003/1084	Not Controlled Action (Particular Manner)	Post-Approval
NBN Transit Fibre Minnamurra Wetlands Section	2011/5900	Not Controlled Action (Particular Manner)	Post-Approval
PEP11 Site Survey	2009/5093	Not Controlled Action (Particular Manner)	Post-Approval
Project 2 Witchcliffe - proposed vineyard & dam	2005/2263	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Rehabilitation of Hexham Swamp	2003/1244	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development	2002/711	Not Controlled Action (Particular Manner)	Post-Approval
Residential Development & Associated Works, Jerberra Estate, Tomerong, NSW	2012/6415	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
supersonic missile launch facility	2000/120	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
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

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Breeding program for Grey Nurse Sharks	2007/3245	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
Stage 2 Masonry Plant, Port Kembla, NSW	2014/7247	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

Scientific Name	Behaviour	Presence
Dolphins		
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur

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
Ardena carneipes Flesh-footed Shearwater [82404]	Breeding	Known to occur
Ardena carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardena grisea Sooty Shearwater [82651]	Breeding	Known to occur
Ardena grisea Sooty Shearwater [82651]	Foraging	Likely to occur
Ardena pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Ardena pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardena tenuirostris Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardena 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

Scientific Name	Behaviour	Presence
Eudyptula minor Little Penguin [1085]	Foraging	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
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Oceanites oceanites Wilson's 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
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	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

Scientific Name	Behaviour	Presence
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]	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
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

Scientific Name	Behaviour	Presence
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
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]	Aggregation	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution	Likely to occur
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur
Whales		
Balaenoptera musculus breviceuda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus breviceuda Pygmy Blue Whale [81317]	Foraging	Likely to be present

Scientific Name	Behaviour	Presence
Megaptera novaeangliae Humpback Whale [38]	Foraging	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur

Bioregional Assessments

SubRegion	BioRegion	Website
Sydney	Sydney Basin	BA website
Hunter	Northern 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 are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 18-Aug-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	8
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	4
Listed Threatened Ecological Communities:	15
Listed Threatened Species:	143
Listed Migratory Species:	81

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:	51
Commonwealth Heritage Places:	5
Listed Marine Species:	126
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:	281
Regional Forest Agreements:	4
Nationally Important Wetlands:	46
EPBC Act Referrals:	140
Key Ecological Features (Marine):	3
Biologically Important Areas:	36
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Corner inlet	Within Ramsar site
East coast cape barren island lagoons	Within Ramsar site
Flood plain lower ringarooma river	Within 10km of Ramsar site
Gippsland lakes	Within Ramsar site
Jocks lagoon	Within Ramsar site
Little waterhouse lake	Within 10km of Ramsar site
Logan lagoon	Within Ramsar site
Western port	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)
- 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

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
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community may occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community likely to occur within area
Gippsland Red Gum (<i>Eucalyptus tereticornis</i> subsp. <i>mediana</i>) Grassy Woodland and Associated Native Grassland	Critically Endangered	Community likely to occur within area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community may occur within area
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
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 (<i>Eucalyptus ovata</i> / <i>E. brookeriana</i>)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (<i>Eucalyptus viminalis</i>) 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 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		

Scientific Name	Threatened Category	Presence Text
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	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
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	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
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
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
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
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
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	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]	Vulnerable	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
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	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	Foraging, feeding or related behaviour 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
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 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	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
Tyto novaehollandiae castanops (Tasmanian population) Masked Owl (Tasmanian) [67051]	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 may occur within area

Scientific Name	Threatened Category	Presence Text
Engaeus martigener Furneaux Burrowing Crayfish [67220]	Endangered	Species or species habitat known to occur within area
FISH		
Brachiopsilus ziebelli Ziebell's Handfish, Waterfall Bay Handfish [83757]	Vulnerable	Species or species habitat likely to occur within area
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Vulnerable	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
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
Thymichthys politus Red Handfish [83756]	Critically Endangered	Species or species habitat may occur within area
FROG		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Litoria watsoni 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 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
MAMMAL		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
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

Scientific Name	Threatened Category	Presence Text
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	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]	Vulnerable	Species or species habitat may occur within area
Perameles gunnii gunnii Eastern Barred Bandicoot (Tasmania) [66651]	Vulnerable	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
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
Potorous longipes Long-footed Potoroo [217]	Endangered	Species or species habitat known to occur within area

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 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
PLANT		
Acacia caerulescens Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle [21883]	Vulnerable	Species or species habitat known to occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	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 orientalis Eastern Spider Orchid [83410]	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

Scientific Name	Threatened Category	Presence Text
Cassinia rugata Wrinkled Cassinia, Wrinkled Dollybush [21885]	Vulnerable	Species or species habitat may occur within area
Commersonia prostrata Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area
Conospermum hookeri Variable Smoke-bush [68161]	Vulnerable	Species or species habitat likely to 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
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat known to occur within area
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
Hiya distans listed as Hypolepis distans Scrambling Ground-fern [92548]	Endangered	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

Scientific Name	Threatened Category	Presence Text
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Phebalium daviesii Davies' Waxflower, St Helens Waxflower [16959]	Critically Endangered	Species or species habitat known to occur within area
Picris evae Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum 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 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 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
Prostanthera galbraithiae Wellington Mintbush [64959]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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 likely 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 jonesii Sky-blue Sun-orchid [76352]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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	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 may 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
SHARK		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Centrophorus harrissoni Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish [68444]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Centrophorus uyato listed as Centrophorus zeehaani Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area
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

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 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 likely to occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	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
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

Scientific Name	Threatened Category	Presence Text
Mobula birostris as Manta birostris Giant Manta Ray [90034]		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
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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]		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]		Species or species habitat known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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]		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]		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 - DUTSON BOMBING RANGE [20030]	VIC
Defence - DUTSON BOMBING RANGE [20029]	VIC
Defence - DUTSON BOMBING RANGE [20037]	VIC
Defence - DUTSON BOMBING RANGE [20036]	VIC
Defence - DUTSON BOMBING RANGE [20033]	VIC
Defence - DUTSON BOMBING RANGE [20032]	VIC
Defence - DUTSON BOMBING RANGE [20031]	VIC
Defence - DUTSON BOMBING RANGE [20054]	VIC
Defence - DUTSON BOMBING RANGE [20047]	VIC
Defence - DUTSON BOMBING RANGE [20060]	VIC
Defence - DUTSON BOMBING RANGE [20056]	VIC

Commonwealth Land Name	State
Defence - DUTSON BOMBING RANGE [20061]	VIC
Defence - DUTSON BOMBING RANGE [20048]	VIC
Defence - DUTSON BOMBING RANGE [20035]	VIC
Defence - DUTSON BOMBING RANGE [20034]	VIC
Defence - DUTSON BOMBING RANGE [20057]	VIC
Defence - DUTSON BOMBING RANGE [20055]	VIC
Defence - DUTSON BOMBING RANGE [20041]	VIC
Defence - DUTSON BOMBING RANGE [20053]	VIC
Defence - DUTSON BOMBING RANGE [20050]	VIC
Defence - DUTSON BOMBING RANGE [20049]	VIC
Defence - DUTSON BOMBING RANGE [20046]	VIC
Defence - DUTSON BOMBING RANGE [20052]	VIC
Defence - DUTSON BOMBING RANGE [20043]	VIC
Defence - DUTSON BOMBING RANGE [20042]	VIC
Defence - DUTSON BOMBING RANGE [20045]	VIC
Defence - DUTSON BOMBING RANGE [20044]	VIC
Defence - DUTSON BOMBING RANGE [20051]	VIC
Defence - DUTSON BOMBING RANGE [20040]	VIC
Defence - DUTSON BOMBING RANGE [20039]	VIC
Defence - DUTSON BOMBING RANGE [20038]	VIC
Defence - DUTSON BOMBING RANGE [20058]	VIC
Defence - DUTSON BOMBING RANGE [20059]	VIC
Defence - DUTSON BOMBING RANGE [20062]	VIC
Unknown	
Commonwealth Land - [21488]	VIC
Commonwealth Land - [60067]	TAS
Commonwealth Land - [60066]	TAS

Commonwealth Land Name	State
Commonwealth Land - [60065]	TAS
Commonwealth Land - [60340]	TAS
Commonwealth Land - [60342]	TAS
Commonwealth Land - [60343]	TAS
Commonwealth Land - [60341]	TAS
Commonwealth Land - [60345]	TAS
Commonwealth Land - [21489]	VIC
Commonwealth Land - [21487]	VIC
Commonwealth Land - [60064]	TAS
Commonwealth Land - [21497]	VIC
Commonwealth Land - [21490]	VIC
Commonwealth Land - [21496]	VIC
Commonwealth Land - [21498]	VIC
Commonwealth Land - [21491]	VIC

Commonwealth Heritage Places [[Resource Information](#)]

Name	State	Status
Historic		
Eddystone Lighthouse	TAS	Listed place
Gabo Island Lighthouse	VIC	Listed place
Goose Island Lighthouse	TAS	Listed place
Swan Island Lighthouse	TAS	Listed place
Wilsons Promontory Lighthouse	VIC	Listed place

Listed Marine Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area

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]		Species or species habitat likely to occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]		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]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

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]		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 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	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

Scientific Name	Threatened Category	Presence Text
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
Limosa limosa Black-tailed Godwit [845]		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 serrator Australasian Gannet [1020]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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 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 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

Scientific Name	Threatened Category	Presence Text
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area overfly marine 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]		Roosting known to occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may 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
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]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	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

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leptoichthys fistularius Brush-tail 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 Half-banded 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
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 Longsnout 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]		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	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

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 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

Current Scientific Name	Status	Type of Presence
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 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

Current Scientific Name	Status	Type of Presence
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

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
Flinders	Marine National Park Zone (IUCN II)
Freycinet	Marine National Park Zone (IUCN II)
Beagle	Multiple Use Zone (IUCN VI)
Boags	Multiple Use Zone (IUCN VI)
East Gippsland	Multiple Use Zone (IUCN VI)
Flinders	Multiple Use Zone (IUCN VI)
Freycinet	Multiple Use Zone (IUCN VI)

Park Name	Zone & IUCN Categories
Freycinet	Recreational Use Zone (IUCN IV)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Agnes Falls S.R.	Natural Features Reserve	VIC
Albatross Island	Nature Reserve	TAS
Anderson Islands	Conservation Area	TAS
Andrew Bay - Grebe Bay G.L.R.	Natural Features Reserve	VIC
Anser Island	Reference Area	VIC
Ansons Bay	Conservation Area	TAS
Arthur Bay	Conservation Area	TAS
Avon-Perry River Delta G.L.R	Natural Features Reserve	VIC
Avon River SS.R.	Natural Features Reserve	VIC
Baawang	Reference Area	VIC
Babel Island	Indigenous Protected Area	TAS
Backwater Morass G.L.R.	Natural Features Reserve	VIC
Badger Island	Indigenous Protected Area	TAS
Bairnsdale F.R.	Nature Conservation Reserve	VIC
Bancroft Bay - Kalimna G.L.R.	Natural Features Reserve	VIC
Bass Pyramid	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Battery Island	Conservation Area	TAS
Baxter Island G.L.R.	Natural Features Reserve	VIC
Baynes Island	Nature Reserve	TAS
Bay of Fires	Conservation Area	TAS
Bemm, Goolengook, Arte and Errinundra Rivers	Heritage River	VIC
Benedore River	Reference Area	VIC
Bennison F.F.R.	Nature Conservation Reserve	VIC
Beware Reef	Marine Sanctuary	VIC
Big Green Island	Nature Reserve	TAS
Big Silver	Conservation Covenant	TAS
Binalongtime	Conservation Covenant	TAS
Bird Island	Game Reserve	TAS
Blond Bay G.L.R.	Natural Features Reserve	VIC
Blond Bay W.R.	Natural Features Reserve	VIC
Blyth Point	Conservation Area	TAS
Boat Harbour Road Killiecrankie	Conservation Covenant	TAS
Boggy Creek	Conservation Area	TAS
Boobyalla	Conservation Area	TAS
Boxen Island	Conservation Area	TAS
Briggs Islet	Conservation Area	TAS
Brodribb River F.F.R	Nature Conservation Reserve	VIC
Brougham Sugarloaf	Conservation Area	TAS
Bun Beetons Point	Conservation Area	TAS
Bunurong	Marine National Park	VIC

Protected Area Name	Reserve Type	State
Bunurong Marine Park	National Parks Act Schedule 4 park or reserve	VIC
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
Cape Liptrap Coastal Park	Conservation Park	VIC
Cape Patterson N.C.R	Natural Features Reserve	VIC
Cape Portland	Conservation Area	TAS
Cat Island	Conservation Area	TAS
Chalky Island	Conservation Area	TAS
Chappell Islands	Nature Reserve	TAS
Chimneys Lagoon	Conservation Covenant	TAS
Clydebank Frontage G.L.R.	Natural Features Reserve	VIC
Clydebank Morass W.R.	Natural Features Reserve	VIC
Cone Islet	Conservation Area	TAS
Corner Inlet	Marine National Park	VIC
Corner Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Craggy Island	Conservation Area	TAS
Croajingolong	National Park	VIC
Curtis Island	Nature Reserve	TAS
Darling Range	Conservation Area	TAS
Darriman H29 B.R	Natural Features Reserve	VIC
Devils Tower	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Doctors Peak	Regional Reserve	TAS
Double Creek	Natural Catchment Area	VIC
Doughboy Island	Conservation Area	TAS
Dowd Morass W.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
Eagle Point G.L.R.	Natural Features Reserve	VIC
East Gippsland Coastal streams	Natural Catchment Area	VIC
East Kangaroo Island	Nature Reserve	TAS
East Moncoeur Island	Conservation Area	TAS
Eddystone Point Lighthouse	Historic Site	TAS
Egg Beach	Conservation Area	TAS
Emita	Nature Recreation Area	TAS
Enstone Park	Conservation Covenant	TAS
Entrance Point	Reference Area	VIC
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
Foochow	Conservation Area	TAS
Forsyth Island	Conservation Area	TAS
Foster Islands	Nature Reserve	TAS
Fotheringate Bay	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Four Mile Creek	Conservation Area	TAS
Franklin River SS.R.	Natural Features Reserve	VIC
Fraser Island G.L.R.	Natural Features Reserve	VIC
Fresh-water Swamp, Woodside Beach W.R	Natural Features Reserve	VIC
Gardens Road	Conservation Covenant	TAS
George River - St Helens	Conservation Covenant	TAS
George Rocks	Nature Reserve	TAS
Giffard H31 B.R	Natural Features Reserve	VIC
Gippsland Lakes Coastal Park	Conservation Park	VIC
Goose Island	Conservation Area	TAS
Great Dog Island	Indigenous Protected Area	TAS
Gull Island	Conservation Area	TAS
Heart Morass W.R	Natural Features Reserve	VIC
Hendersons Lagoon	Conservation Covenant	TAS
Hogan Group	Conservation Area	TAS
Hollands Landing G.L.R.	Natural Features Reserve	VIC
Holts Point	Conservation Area	TAS
Humbug Point	Nature Recreation Area	TAS
Hunter Island	Conservation Area	TAS
Isabella Island	Nature Reserve	TAS
Jack Smith Lake W.R	Natural Features Reserve	VIC
Jacksons Cove	Conservation Area	TAS
Jones Bay G.L.R	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Jones Bay W.R	Natural Features Reserve	VIC
Kent Group	National Park	TAS
Kilcunda N.C.R.	Natural Features Reserve	VIC
Killiecrankie	Nature Recreation Area	TAS
Kuhns Rd Memana	Conservation Covenant	TAS
Lackrana	Conservation Area	TAS
Lake Coleman W.R	Natural Features Reserve	VIC
Lake Coleman West W.R	Natural Features Reserve	VIC
Lake Corringale W.R	Natural Features Reserve	VIC
Lake Curlip W.R.	Natural Features Reserve	VIC
Lake Denison W.R	Natural Features Reserve	VIC
Lake Kakydra G.L.R	Natural Features Reserve	VIC
Lake Tyers S.P.	State Park	VIC
Lanark Farm #1	Conservation Covenant	TAS
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
Lands End	Conservation Covenant	TAS
Leongatha H3 B.R.	Natural Features Reserve	VIC
Lighthouse Point	Conservation Area	TAS
Lime Pit Road	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Little Beach	Conservation Area	TAS
Little Chalky Island	Conservation Area	TAS
Little Dog Island	Game Reserve	TAS
Little Green Island	Conservation Area	TAS
Little Island	Conservation Area	TAS
Little Silver	Conservation Covenant	TAS
Little Swan Island	Nature Reserve	TAS
Logan Lagoon	State Reserve	TAS
Logan Lagoon	Conservation Area	TAS
Logans Lagoon	Conservation Covenant	TAS
Long Island	Conservation Area	TAS
Low Islets	Nature Reserve	TAS
Low Point	Conservation Area	TAS
Lughrata	Conservation Covenant	TAS
Iungatalanana	Indigenous Protected Area	TAS
Lyall Road Binalong Bay	Conservation Covenant	TAS
Macleod Morass W.R.	Natural Features Reserve	VIC
Mallacoota B.R.	Natural Features Reserve	VIC
Marriott Reef	Conservation Area	TAS
Marshall Beach	Conservation Area	TAS
Marthvale	Conservation Covenant	TAS
McDonalds Point	Conservation Area	TAS
Medeas Cove	Conservation Area	TAS
Meerlieu I16 B.R	Natural Features Reserve	VIC
Metung B.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Mile Island	Conservation Area	TAS
Mitchell and Wonnangatta Rivers	Heritage River	VIC
Mitchell River Silt Jetties G.L.R.	Natural Features Reserve	VIC
Mitchell River water reserve G.L.R.	Natural Features Reserve	VIC
Moriarty Rocks	Nature Reserve	TAS
Morley Swamp G.L.R.	Natural Features Reserve	VIC
Mortimers Paddock B.R.	Natural Features Reserve	VIC
Mount Chappell Island	Indigenous Protected Area	TAS
Mount Pearson	State Reserve	TAS
Mount Tanner	Nature Recreation Area	TAS
Mount Vereker Creek	Natural Catchment Area	VIC
Mount William	National Park	TAS
Mount William	Conservation Area	TAS
Mulligans Hill	Conservation Covenant	TAS
Mulligans Hill	Conservation Area	TAS
Musselroe Bay	Conservation Area	TAS
Nadgee	Nature Reserve	NSW
Nares Rocks	Conservation Area	TAS
Neds Reef	Conservation Area	TAS
Nicholson floodplain G.L.R	Natural Features 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

Protected Area Name	Reserve Type	State
North East Islet	Nature Reserve	TAS
North East River	Game Reserve	TAS
Nungurner B.R.	Natural Features Reserve	VIC
Nyerimilang Park G.L.R.	Natural Features Reserve	VIC
Oyster Rocks	Conservation Area	TAS
Paddys Island	Nature Reserve	TAS
Palana Beach	Nature Recreation Area	TAS
Parnella	Conservation Area	TAS
Pasco Group	Conservation Area	TAS
Passage Island	Conservation Area	TAS
Patriarchs	Private Sanctuary	TAS
Patriarchs	Conservation Area	TAS
Phillip Island Nature Park	Other	VIC
Poddy Bay G.L.R	Natural Features Reserve	VIC
Point Fullarton G.L.R.	Natural Features Reserve	VIC
Point Hicks	Marine National Park	VIC
Prime Seal Island	Conservation Area	TAS
Rame Head	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Ram Island	Conservation Area	TAS
Raymond Island G.L.R.	Natural Features Reserve	VIC
Red Morass G.L.R.	Natural Features Reserve	VIC
Reedy Lagoon	Private Nature Reserve	TAS
Reef Island	Conservation Area	TAS
Rigby Island G.L.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Ringarooma Tier - Rushy Lagoon	Conservation Covenant	TAS
Rodondo Island	Nature Reserve	TAS
Roseneath Peninsula (1) G.L.R.	Natural Features Reserve	VIC
Roseneath Peninsula (2) G.L.R.	Natural Features Reserve	VIC
Roydon Island	Conservation Area	TAS
Salt Lake - Backwater Morass G.L.R.	Natural Features Reserve	VIC
Sandpatch	Wilderness Zone	VIC
Scamander	Regional Reserve	TAS
Scamander	Conservation Area	TAS
Screw Creek N.C.R.	Natural Features Reserve	VIC
Seal Creek	Reference Area	VIC
Seal Islands W.R.	Nature Conservation Reserve	VIC
Sellars Lagoon	Game Reserve	TAS
Sentinel Island	Conservation Area	TAS
Settlement Point	Conservation Area	TAS
Shag Lagoon	Conservation Area	TAS
Shallow Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
Sister Islands	Conservation Area	TAS
Slaughterhouse Creek G.L.R	Natural Features Reserve	VIC
Snowy River	Heritage River	VIC
Southern Wilsons Promontory	Remote and Natural Area - Schedule 6, National Parks Act	VIC
South Pats River	Conservation Area	TAS
Spike Island	Conservation Area	TAS

Protected Area Name	Reserve Type	State
Steel Bay - Newland Backwater G.L.R.	Natural Features Reserve	VIC
St Helens	Conservation Area	TAS
St Helens 1 Marthavale	Conservation Covenant	TAS
Storehouse Island	Conservation Area	TAS
Strzelecki	National Park	TAS
Sugarloaf Rock	Conservation Area	TAS
Summer Camp	Conservation Area	TAS
Swan Reach Bay G.L.R.	Natural Features Reserve	VIC
Swell Point - Roseneath Point G.L.R.	Natural Features Reserve	VIC
Sydney Cove	Historic Site	TAS
Tambo Delta - Metung G.L.R.	Natural Features Reserve	VIC
Tarra Tarra B.R	Natural Features Reserve	VIC
Tarwin Lower F.R.	Nature Conservation Reserve	VIC
Tenth Island	Nature Reserve	TAS
The Dardenelles G.L.R	Natural Features Reserve	VIC
The Dock	Conservation Covenant	TAS
The Dutchman	Conservation Area	TAS
The Lakes	National Park	VIC
Three Hummock Island	State Reserve	TAS
Trefula	Conservation Covenant	TAS
Trousers Point Beach	Conservation Area	TAS
Tucker Swamp G.L.R	Natural Features Reserve	VIC
Unnamed (Badger Corner)	Conservation Area	TAS
Unnamed P0155	Private Nature Reserve	VIC

Protected Area Name	Reserve Type	State
Unnamed P0190	Private Nature Reserve	VIC
Vansittart Island	Conservation Area	TAS
Vereker Creek	Reference Area	VIC
Victoria Lagoon G.L.R.	Natural Features Reserve	VIC
Waratah B.R	Natural Features Reserve	VIC
Waterhouse Island	Conservation Area	TAS
Wattle Point G.L.R.	Natural Features Reserve	VIC
Welshpool H17 B.R	Natural Features Reserve	VIC
West Moncoeur Island	Nature Reserve	TAS
White Beach	Conservation Area	TAS
William Hunter F.R	Nature Conservation Reserve	VIC
Wilson's Promontory	Wilderness Zone	VIC
Wilson's Promontory	National Park	VIC
Wilson's Promontory	Marine National Park	VIC
Wilson's Promontory Islands	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Wilson's Promontory Marine Park	National Parks Act Schedule 4 park or reserve	VIC
Wilson's Promontory Marine Reserve	National Parks Act Schedule 4 park or reserve	VIC
Wingaroo	Nature Reserve	TAS
Winifred Curtis Trust Scamander	Conservation Covenant	TAS
Wonthaggi G237 B.R.	Natural Features Reserve	VIC
Wonthaggi G238 B.R.	Natural Features Reserve	VIC
Wonthaggi G239 B.R.	Natural Features Reserve	VIC

Protected Area Name	Reserve Type	State
Wonthaggi G240 B.R.	Natural Features Reserve	VIC
Wonthaggi G241 B.R.	Natural Features Reserve	VIC
Wonthaggi Heathlands N.C.R	Natural Features Reserve	VIC
Wright Rock	Nature Reserve	TAS
Wybalenna Island	Conservation Area	TAS
Yanakie F.R	Nature Conservation Reserve	VIC
Youngs 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
East Gippsland RFA	Victoria
Eden RFA	New South Wales
Gippsland RFA	Victoria
Tasmania RFA	Tasmania

Nationally Important Wetlands

[\[Resource Information \]](#)

Wetland Name	State
Anderson Inlet	VIC
Benedore River	VIC
Bosses/Nebbor Swamp	VIC
Corner Inlet	VIC
Ewing's Marsh (Morass)	VIC
Fergusons Lagoon	TAS
Flyover Lagoon 1	TAS
Flyover Lagoon 2	TAS
Hogans Lagoon	TAS

Wetland Name	State
Jack Smith Lake State Game Reserve	VIC
Jocks Lagoon	TAS
Lake Bunga	VIC
Lake King Wetlands	VIC
Lake Tyers	VIC
Lake Victoria Wetlands	VIC
Lake Wellington Wetlands	VIC
Little Thirsty Lagoon	TAS
Logan Lagoon	TAS
Lower Snowy River Wetlands System	VIC
Macleod Morass	VIC
Mallacoota Inlet Wetlands	VIC
Nadgee Lake and tributary wetlands	NSW
Powlett River Mouth	VIC
Russells Swamp	VIC
Sellars Lagoon	TAS
Shallow Inlet Marine & Coastal Park	VIC
Snowy River	VIC
Stans Lagoon	TAS
Sydenham Inlet Wetlands	VIC
Syndicate Lagoon	TAS
Tamboon Inlet Wetlands	VIC
Tambo River (Lower Reaches) East Swamps	VIC
Thompsons Lagoon	TAS
Thurra River	VIC
Tregaron Lagoons 1	TAS
Tregaron Lagoons 2	TAS

Wetland Name	State
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
Western Port	VIC

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
North East Wind - construction and operation of wind turbines and associated infrastructure	2022/09388		Assessment
Seadragon Offshore Wind Farm	2022/9163		Assessment
Controlled action			
Alberton Wind Farm, Sth Gippsland, Vic	2017/7854	Controlled Action	Post-Approval
Bald Hills Wind Farm 80 Turbines	2002/730	Controlled Action	Post-Approval
Constructed wetland in Macleod Morass	2000/14	Controlled Action	Post-Approval
Develop an Offshore Tidal Energy Facility	2008/4518	Controlled Action	Completed
Gippsland Lakes Mosquito Control Aerial /Hovercraft Spraying	2001/491	Controlled Action	Completed
Gippsland Regional Port Project	2020/8667	Controlled Action	Assessment Approach

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Golden Beach Gas Project	2019/8513	Controlled Action	Post-Approval
Land rehabilitation following clearing	2008/4635	Controlled Action	Post-Approval
Maintenance Dredging of Toora Boat Ramp Channel	2008/4376	Controlled Action	Completed
Musselroe Wind Farm	2002/683	Controlled Action	Post-Approval
Piano Cove Golf Course and Hotel	2020/8808	Controlled Action	Further Information Request
Riviera Harbours Development (Stages 8D and 3rd entrance channel)	2002/732	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
Thomson River Mercury Recovery Project	2010/5734	Controlled Action	Completed
Victorian Desalination Project, Bass Coast	2008/3948	Controlled Action	Post-Approval
Wellington Waters Canal Estate	2001/332	Controlled Action	Completed
Windfarm	2003/1109	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
55m lattice tower & infrastructure	2003/1159	Not Controlled Action	Completed
accomodation units and associated administration and recreational facilities	2001/430	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Acquistion of 2D seismic data in State Waters adjacent to Ninety Mile Beach-VIC/P39(V)	2004/1889	Not Controlled Action	Completed
Allmans Levee Track - Maintenance Work	2003/1053	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
Bass Basin - Pee Jay-1 - Drilling Program	2007/3908	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
Communications tower extension	2003/1099	Not Controlled Action	Completed
Construction of an ocean access boat ramp at Bastion Point	2004/1407	Not Controlled Action	Completed
Cunninghame Arm Redevelopment (Stage 3)	2002/618	Not Controlled Action	Completed
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed
development of retirement resort	2004/1828	Not Controlled Action	Completed
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
East Pilchard exploration well	2001/137	Not Controlled Action	Completed
Establishment of a 6 turbine windfarm near Wonthaggi	2002/820	Not Controlled Action	Completed
Exploration Drilling Well Trefoil-1	2003/1058	Not Controlled Action	Completed
Ferry Service Infrastructure Development	2001/269	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
Hayes Hill Ridge Wind Farm	2007/3437	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
Installation of optic fibre cable from Inverloch, Victoria to Stanley, Tasmania	2002/906	Not Controlled Action	Completed
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed
Lower Latrobe River Wetlands: Water Regulation Infrastructure Project, Victoria	2017/7999	Not Controlled Action	Completed
Macleod Morass Over-Abundant Vegetation Management	2012/6325	Not Controlled Action	Completed
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Newhaven Yacht Squadron marina extension	2004/1450	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
Port Welshpool Harbour Dredging	2007/3521	Not Controlled Action	Completed
Proposed Multi-lot Residential Subdivision, 75 Paynesville Road and 114 Newlands Drive, Paynesville.	2017/7896	Not Controlled Action	Completed
Pump station upgrades and rising main construction, Lakes Entrance, Victoria	2016/7646	Not Controlled Action	Completed
Rising Main Upgrade Bridge Pumping Station to Wastewater Treatment Plant, Bairnsdale, VIC	2014/7312	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
Spikey Beach 1, West Triton Drilling Program, Bass Basin Permit T/38P	2007/3914	Not Controlled Action	Completed
Subdivision for Residential development	2004/1823	Not Controlled Action	Completed
Subdivision of 68 ha into two blocks, construction of access road and house site	2004/1531	Not Controlled Action	Completed
Telstra optic fibre cable across Bass Strait - Sub bottom profiler Surve	2002/779	Not Controlled Action	Completed
The 3000 Acres, clearing and development of native vegetation	2006/3199	Not Controlled Action	Completed
To undertake maintenance dredging of the Toora Boat Ramp Channel, VIC	2014/7225	Not Controlled Action	Completed
Turrum Phase 2 Development Project	2008/4191	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Vegetation Management, Macleod Morass Wildlife Reserve, Gippsland Lakes Ramsar Site, VIC	2014/7265	Not Controlled Action	Completed
Venus Bay Outfall Extension	2004/1555	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D & 3D seismic survey T/39P	2005/2237	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 (Particular Manner)	Post-Approval
2D Seismic Survey	2008/3962	Not Controlled Action (Particular Manner)	Post-Approval
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
3D Seismic Survey	2008/4528	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
Aroo Chappell 3D seismic survey	2010/5701	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
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
Construction of wharf	2003/1050	Not Controlled Action (Particular Manner)	Post-Approval
Dalrymple 3D Seismic Survey	2010/5680	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
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

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
Lakes Entrance Sand Management Program Trial Dredging	2007/3694	Not Controlled Action (Particular Manner)	Completed
Lakes Entrance Sand Management Program Trial Dredging	2007/3852	Not Controlled Action (Particular Manner)	Post-Approval
Longtom-5 Offshore Production Drilling (Vic/L29), VIC	2012/6498	Not Controlled Action (Particular Manner)	Post-Approval
Longtom South -1 Exploration Drilling	2011/6217	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging of Oceanic Sand	2011/5932	Not Controlled Action (Particular Manner)	Post-Approval
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
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
Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic	2017/8097	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

Title of referral	Reference	Referral Outcome	Assessment Status
<u>Not controlled action (particular manner)</u>			
		Manner)	
Residential Building	2003/935	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
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
Shearwater 2D and 3D marine seismic survey	2005/2180	Not Controlled Action (Particular Manner)	Post-Approval
Silvereye 3D Seismic Survey	2007/3551	Not Controlled Action (Particular Manner)	Post-Approval
Soil and Organic Recycling Facility	2005/2216	Not Controlled Action (Particular Manner)	Post-Approval
Southern Flanks 2D Marine Seismic Survey	2010/5288	Not Controlled Action (Particular Manner)	Post-Approval
Southern Margins 3D Seismic Survey VIC/P55	2007/3780	Not Controlled Action (Particular Manner)	Post-Approval
supersonic missile launch facility	2000/120	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Tap Oil Ltd Molson 2D Seismic Survey T47P	2008/3967	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			
All actions taken in response to the current severe bushfires in Victoria.	2009/4787	Referral Decision	Completed
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed
Darymple 3D Seismic Survey, Petroleum Exploration Permit T/41P	2010/5322	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
Mineral Exploration Ringarooma Bay	2012/6508	Referral Decision	Completed
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed
Stanton 3D Marine Seismic Survey	2013/6764	Referral Decision	Completed
Upgrade of Corringale 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
------	--------

Name	Region
Big Horseshoe Canyon	South-east
Seamounts South and east of Tasmania	South-east
Upwelling East of Eden	South-east

Biologically Important Areas

Scientific Name	Behaviour	Presence
Dolphins		
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Seabirds		
Ardenna grisea		
Sooty Shearwater [82651]	Foraging	Known 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 [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
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Likely to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	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

Scientific Name	Behaviour	Presence
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution	Likely to occur
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur

Whales

Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
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
Megaptera novaeangliae Humpback Whale [38]	Foraging	Known to occur

Bioregional Assessments

SubRegion	BioRegion	Website
Gippsland	Gippsland Basin	BA website

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix E: Consultation reports

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Appendix E-1 Relevant persons (Regulation 25(1)(a)-(e))

Relevant persons (Regulation 25(1)(a))

Ref	Person/organisation	Geo. area	Function, interest or activity
1	Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet)	EMBA	Function as a Tasmanian State government agency that aims to protect and promote Tasmania's Aboriginal heritage and facilitate the return of land to Tasmania's Aboriginal people.
2	Australian Fisheries Management Authority (AFMA)	EMBA	Function as a Commonwealth government agency responsible for management of Commonwealth commercial fisheries from 3-200nm. The OAs overlap with local fisheries.
3	Australian Hydrographic Office (AHO)	OA	Function as a Commonwealth government agency responsible for publication of nautical charts and other information for safety of ships navigating in Australian waters (including Notices to Mariners).
4	Australian Maritime Safety Authority (AMSA)	EMBA	Function as a Commonwealth government statutory authority responsible for maritime safety, protection of the marine environment including marine pollution and maritime aviation search and rescue.
5	Bass Coast Shire Council	EMBA	Function as a Victorian local government for Bass Coast Shire. Provides a range of services to community and is interested in maintaining sustainable communities and business.
6	CarbonNet	ATBA	Function as Victoria government agency to establish a commercial scale Carbon Capture and Storage network in Gippsland, Victoria.
7	Department of Agriculture, Fisheries and Forestry (DAFF)	EMBA	Function as a Commonwealth government department that manages biosecurity risks to Australia for agriculture, fisheries and forestry, industry growth and resilience and sustainability.
8	Department of Climate Change, Energy, the Environment and Water (DCCEEW)	EMBA	Function as a Commonwealth government department whose role is to help Australia respond to climate change, manage water and energy resources, environment, parks and heritage. They have responsibility for considering sea dumping applications.
9	Department of Defence	EMBA	Function as Commonwealth department for national defence. The East Sale AirBase is located in Gippsland and has activities over Bass Strait.
10	Department of Energy, Environment and Climate	EMBA	Function as Victorian State government department is to protect plant, animal and human health from

Ref	Person/organisation	Geo. area	Function, interest or activity
	Action (DEECA) (Agriculture)		biosecurity threats in Victoria. This includes invasive marine species.
11	Department of Energy, Environment and Climate Action (DEECA) (Marine and Coasts)	EMBA	Function as Victorian State government department to protect and enhance Victoria's coastline and its waters to support business, tourism, recreation, wellbeing and biodiversity. It has the primary responsibility for cetacean entanglements, strandings and vessel strike and wildlife impacted by marine pollution events like oil spills.
12	Department of Industry, Science, Energy and Resources (DISER)	ATBA	Function as Commonwealth government department responsible for minerals and resources, oil and gas, international trade and national security, and radioactive waste. Portfolio contains NOPSEMA, NOPTA, and CSIRO.
13	Department of Jobs, Skills, Industry and Regions (DJSIR)	ATBA	Function as a Victorian State government department for economic recovery and business and industry engagement
14	Department of Natural Resources and Environment Tasmania	EMBA	Function as Tasmanian State government department responsible for protection from biosecurity threats to land and water, protection of marine resources, water and agriculture and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.
15	Department of Transport and Planning	EMBA	Function as Victorian State government department with primary responsibility for maritime sourced pollution oil spills in Victorian water and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.
16	Director of National Parks	ATBA	Function as a Commonwealth entity responsible for the management of Commonwealth terrestrial and marine protected areas.
17	East Gippsland Catchment Management Authority	EMBA	Function as a Victoria government statutory authority for the integrated management of land, biodiversity and water resources in the region. The Authority also has responsibility for the planning and delivery of river health works, and several statutory activities.
18	East Gippsland Shire Council	EMBA	Function as Victorian government local council delivering services to community and issuing planning permits for land use and development throughout East Gippsland. Has an interest in maintaining sustainable communities and business.

Ref	Person/organisation	Geo. area	Function, interest or activity
19	East Gippsland Water	EMBA	Function as Victorian government statutory corporation responsible for delivery of water supply and waste water management in East Gippsland,
20	Environment Protection Authority Victoria	EMBA	Function as the Victoria's State environmental regulator and performs oil spill response support functions and conducts incident investigations.
21	Environmental Protection Agency (Tas)	EMBA	Function as Tasmanian regulator responsible for the environmental protection and management, including ensuring that activities do not cause unacceptable pollution. They also have a function of oil spill response control agency in Tasmanian State waters.
22	Fire Rescue Victoria	EMBA	Function as fire and rescue service for the state of Victoria. Responsible for marine response associated with fires, chemical spills on ships and in ports, and other marine related emergencies.
23	Gippsland Ports	ATBA	Function as Victorian statutory authority responsible for five Gippsland Ports, including Lakes Entrance, Port of Corner Inlet and Port Albert.
24	Gippsland Water	EMBA	Function as Victorian government statutory corporation to deliver fresh, clean drinking water, and manage and treat waste water.
25	Indigenous Land and Sea Corporation	EMBA	Function as a Commonwealth government statutory authority with national responsibilities to assist Aboriginal and Torres Strait Islander people to acquire land and to manage assets to achieve cultural, social, environmental and economic benefits for Indigenous peoples.
26	Maritime Border Command	EMBA	Function as a Commonwealth government agency is Australia's principal civil maritime security agency, a de facto coast guard, operating in the maritime domain to ensure compliance with Australia's maritime legislation by foreign and domestic non-state actors.
27	Mornington Peninsula Shire	EMBA	Function as department or agency of Victoria as Local Council
28	National Offshore Petroleum Titles Administrator (NOPTA)	EMBA	Function as Commonwealth government agency responsible for the day-to-day administration of petroleum & greenhouse gas titles in Commonwealth waters in Australia.

Ref	Person/organisation	Geo. area	Function, interest or activity
29	Parks Australia	ATBA	Function as Commonwealth government agency responsible for managing Commonwealth parks, reserves and conservation zones.
30	Parks Victoria	EMBA	Function as a Victorian State Government agency that manages coastal marine parks and reserves, and coastal areas. They manage significant stretches of land along the Gippsland coastline and some maritime infrastructure in the Gippsland area (e.g. some piers, jetties, berths and ports including Western Port). Support agency for oil spill response.
31	Ports Victoria	EMBA	Function as Victorian State government agency that manages the safe transit of vessels into and out of Victoria's commercial ports. It provides maritime expertise, informing the strategic development and operations within Victoria's commercial ports and waterways.
32	Relevant Person #323	EMBA	Activities as Member of Parliament - State
33	Safe Transport Victoria - Maritime	ATBA	Function as a Victorian State government department responsible for conducting audits of Victoria's ports and waterways and work with the entities that manage them to ensure they are safe for all waterway users.
34	South Gippsland Shire Council	EMBA	Function as department or agency of Victoria as Local Council
35	State Emergency Service	EMBA	Function as a Commonwealth government agency responsible for flood, storm, tsunami, earthquake and landslide throughout Australia.
36	Tasmania Parks and Wildlife Service	EMBA	Function as Tasmanian State Government agency working to conserve the State's natural and cultural heritage while providing for sustainable use and economic opportunities for the Tasmanian community.
37	Transport for NSW	EMBA	Function as a NSW State government department responsible for NSW's maritime safety and management of transport on coastal waterways. They also fill the function of oil spill response control agency in NSW state waters.
38	Victorian Fisheries Authority	ATBA	Function as a Victorian State government agency to effectively manage Victoria's fisheries resources. This includes providing support during an emergency that involves cetacean entanglement, strandings and vessel strike; responding to pollution in waterways; respond to marine pest incursions; and preventing noxious aquatic species being brought into Victoria.

Ref	Person/organisation	Geo. area	Function, interest or activity
39	Wellington Shire Council	EMBA	Function as department or agency of Victoria as Local Council
40	West Gippsland Catchment Management Authority	EMBA	Function as a Victorian State government statutory authority to manage land and water resources in the West Gippsland region, including estuaries.

Relevant persons (Regulation 25(1)(b))

Ref	Person/organisation	Geo. area	Function, interest or activity
41	Department of Energy, Environment and Climate Action (DEECA)	ATBA	Function as department of the Victorian Government working with industry and the community to develop Victoria's secure and sustainable energy future. Responsible for earth resources exploration, licensing, approval of applications, and enforcement on land and state waters. Responsible for protection of biodiversity and biosecurity on land and in State waters. Has responsibility to approve sea dumping applications in State waters.

Relevant persons (Regulation 25(1)(d))

Ref	Person/organisation	Geo. area	Function, interest or activity
42	3D Oil	EMBA	Person or organisation with activities as oil and gas company with licenses offshore from Gippsland.
43	Aboriginal Heritage Council Tasmania (Report to AHT) (TAS)	EMBA	Statutory council established in 2017 under the Aboriginal Heritage Act 1975. An independent body who advise the Tasmanian Government, land managers and owners on the protection and management of Aboriginal cultural heritage in Tasmania.
44	Aboriginal Land Council of Tasmania (now directs to TAC)	EMBA	Organisation representing the political and community development aspirations of the Tasmanian Aboriginal community.
45	Aboriginal Launceston (TAS)	EMBA	Organisation representing Traditional Owners
46	AGL Energy (Gippsland Skies)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
47	Aquila Fishing Charters	EMBA	Person or organisation with activities as local fishing charter business.

Ref	Person/organisation	Geo. area	Function, interest or activity
48	Australian Conservation Foundation	EMBA	Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.
49	Australian Institute of Marine and Power Engineer	EMBA	Union representing the industrial and professional interests of Marine Engineers in Australia.
50	Australian Marine Conservation Society (ACMS)	EMBA	National charity dedicated solely to protecting our precious ocean wildlife – a community of ocean lovers across the nation working for healthy seas.
51	Australian Southern Bluefin Tuna Industry Association	EMBA	Organisation representing the Australian Southern Bluefin Tuna Industry working to maintain a high level of quality and training.
52	Australian Volunteer Coastguard	EMBA	Organisation responding to a variety of marine incident types and supporting other agencies in events such as marine fire and medical evacuation from vessels.
53	Australian WildCatch Fishing	ATBA	Activities as business operating five fishing vessels in Gippsland and supports a variety of other Vessels, with the design and construction of Fishing Gear, Crew placement, Quota, licence management and associated administration.
54	Australian Wildlife Conservancy	EMBA	Interest as Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.
55	Australian Workers' Union	EMBA	Activities as negotiating workplace enterprise agreements
56	Bass Strait Bait & Tackle Lakes Entrance	EMBA	Organisation as Lakes Entrance based business servicing the recreational fishing industry.
57	Beach Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.
58	Bluefloat	ATBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
59	Boating Industry Association of Victoria	EMBA	Not-for-profit organisation and the peak body representing the recreational and light commercial marine industry.
60	Bodalla Local Aboriginal Land Council (NSW)	EMBA	Organisation representing Traditional Owners
61	Bunurong Land Council Aboriginal Corporation	EMBA	Organisation representing Traditional Owners

Ref	Person/organisation	Geo. area	Function, interest or activity
62	Bush Heritage	EMBA	Interest as a non-profit organisation with headquarters in Melbourne, Australia, that operates throughout Australia.
63	Cape Barren Island Aboriginal Association Incorporated (TAS)	EMBA	Organisation representing Traditional Owners
64	Catchers Trust (Chairman) (NSW)	EMBA	Activities as Chairman of Catchers Trust in NSW, a sounding board for licensed fishermen and a mechanism to distribute profits from Sydney Fish Markets
65	Circular Head Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners
66	Committee for Gippsland	EMBA	Interests as independent group established to represent all sectors of business, industry and community views to collaboration on regional priorities to benefit Gippsland communities.
67	Commonwealth Fisheries Association	EMBA	Organisation contributing to the formulation of effective and responsible fisheries policies.
68	Community Over Mining	EMBA	Interest as non-government organisation covering many topics in Gippsland and around Australia including pollution to air, land and water.
69	Construction, Forestry, Maritime, Mining and Energy Union	EMBA	Activities as trade union in building and construction, forestry and furnishing products, maritime and mining and energy production.
70	Cooper Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.
71	Corio Generation Limited	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
72	Corner Inlet Fisheries Habitat Association	EMBA	Person or organisation to facilitate and encourage better habitat protection and stewardship of the local marine resource.
73	Country Fire Authority (Region 10)	EMBA	Volunteer organisation fire service responsible for fire suppression, rescues, and response to other accidents and hazards across most of the state Victoria, Australia
74	East Gippsland Estuarine Fishermen's Association	EMBA	Person or organisation representing the interests of the Gippsland Lakes Estuarine fishers.

Ref	Person/organisation	Geo. area	Function, interest or activity
75	Eastern Victorian Sea Urchin Divers Association	EMBA	Organisation representing Sea Urchin Divers.
76	Eastern Zone Abalone Industry Association	ATBA	Activities as the wild catch abalone industry sector that operates in the Mallacoota regions of Victoria.
77	Elders Council of Tasmania Aboriginal Corporation	EMBA	Organisation representing Traditional Owners
78	Electrical Trades Union	EMBA	Activities as contractors - services include closure studies and decommissioning, deconstruction and demolition, civil engineering and construction, landscaping and external works, resource recovery and waste management, asbestos removal and disposal, site remediation, rehabilitation and revegetation, and heavy plant rental.
79	Emperor Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.
80	Environment Victoria	EMBA	Interest as an independent and not-for-profit group campaigning for a safe climate, healthy rivers and sustainable living.
81	Extinction Rebellion Australia	EMBA	Interest as eNGO focused on persuading governments to act on climate and ecological matters.
82	Far Out Charters	EMBA	Organisation operating offshore fishing charters based out of Lakes Entrance.
83	First Tasmanians Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners
84	Fishing Tribunal	ATBA	Activities as independent group established to consider commercial fishing vessel damage claims resulting from interaction with Esso equipment/facilities.
85	Flinders Island Aboriginal Association Inc (TAS)	EMBA	Organisation representing Traditional Owners
86	Friends of the Earth	EMBA	Interest as eNGO working to protect and/or educate about the natural environment.
87	Game Fishing Association of Victoria	ATBA	Activities as the governing body for Game Fishing in Victoria.
88	Gippsland Lakes Fishing Club	ATBA	Activities as a recreational fishing club based in Lakes Entrance.
89	Gippsland Lakes Yacht Club	EMBA	Organisation sailing club in East Gippsland

Ref	Person/organisation	Geo. area	Function, interest or activity
90	GreenPeace	EMBA	Interest as eNGO campaigning for a green and peaceful future.
91	Gulaga and Biamanga Joint Authority (NSW)	EMBA	Organisation representing Traditional Owners
92	GunaiKurnai Land and Waters Aboriginal Corporation	EMBA	Function, interests and activities as Registered Aboriginal Party that represents the GunaiKurnai people, the Traditional Owners of our Country, as determined by the Victorian Aboriginal Heritage Council under the Aboriginal Heritage Act 2006.
93	H2O Tours & Adventures	EMBA	Organisation fishing charter operator.
94	Hastings Coastal Advisory Group	EMBA	Organisation advising Council in the use or development, planning, management, protecting and enhancing the Shire's coastlines
95	Hewardia	ATBA	Activities as Lakes Entrance based commercial fishing boat
96	High Sea Wind	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
97	Iberdrola Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
98	Independent chair of Fishing Tribunal	ATBA	Activities as Independent Chair of Esso's Fishing Tribunal
99	King Island Shire Council	EMBA	Function as department or agency of Tasmania local council.
100	Lake Tyers Aboriginal Trust	EMBA	Organisation representing Traditional Owners
101	Lake Tyers Beach Angling Club	EMBA	Organisation as recreational fishing club based in Lakes Tyers.
102	Lakes Charter Fishing	EMBA	Organisation as fishing charter operator.
103	Lakes Entrance Fishermen Limited	ATBA	Activities as Fishing co-operative representing the interests of Lakes Entrance based commercial fishing vessels. Represents Lakes Entrance commercial fishing by providing a full-service unloading facility to the local fishing fleet. From here, fresh seafood is distributed to local shops.
104	Lakes Entrance Offshore Charters	EMBA	Organisation as fishing charter operator.

Ref	Person/organisation	Geo. area	Function, interest or activity
105	Lakes Entrance Scallop Fishing Industry Association	ATBA	Activities as commercial scallop fishing industry group.
106	Lakes Explorer	EMBA	Organisation as tour operator.
107	Life Saving Victoria	EMBA	Organisation working with communities, educational institutions, government agencies, businesses and the broader aquatic industry to prevent aquatic related death and injury in all Victorian communities.
108	Marine and Safety Tasmania	EMBA	Organisation established to ensure the safe operation of vessels, provide and manage marine facilities and manage environmental issues relating to vessels.
109	Maritime Industry Australia Limited	ATBA	Activities as organisation established to be the voice and advocate of the Australian maritime industry.
110	Maritime Union of Australia	EMBA	Activities as union for waterside workers, seafarers, port workers, professional divers, and office workers associated with Australian ports
111	Melythina tiakana warrana Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners
112	Member of Fishing Tribunal	ATBA	Activities as Member of Esso's Fishing Tribunal
113	Mitchelson Fisheries	ATBA	Activities as commercial fishing company based in Lakes Entrance who represent themselves.
114	Navigator North Project Pty Ltd	ATBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
115	New South Wales Aboriginal Land Council	EMBA	Organisation as NSW State peak representative body in Aboriginal affairs.
116	NSW Local Aboriginal Land Council: Awabakal	EMBA	Function as department or agency of NSW local council.
117	NSW Local Aboriginal Land Council: Bahtabah	EMBA	Function as department or agency of NSW local council.
118	NSW Local Aboriginal Land Council: Batemans Bay	EMBA	Function as department or agency of NSW local council.
119	NSW Local Aboriginal Land Council: Bega	EMBA	Function as department or agency of NSW local council.
120	NSW Local Aboriginal Land Council: Birpai	EMBA	Function as Indigenous Land Council

Ref	Person/organisation	Geo. area	Function, interest or activity
121	NSW Local Aboriginal Land Council: Bodalla	EMBA	Function as department or agency of NSW local council.
122	NSW Local Aboriginal Land Council: Bunyah	EMBA	Function as Indigenous Land Council
123	NSW Local Aboriginal Land Council: Cobowra	EMBA	Function as department or agency of NSW local council.
124	NSW Local Aboriginal Land Council: Darkinjung	EMBA	Function as department or agency of NSW local council.
125	NSW Local Aboriginal Land Council: Eden	EMBA	Function as department or agency of NSW local council.
126	NSW Local Aboriginal Land Council: Forster	EMBA	Function as department or agency of NSW local council.
127	NSW Local Aboriginal Land Council: Illawarra	EMBA	Function as department or agency of NSW local council.
128	NSW Local Aboriginal Land Council: Jerrinja	EMBA	Function as department or agency of NSW local council.
129	NSW Local Aboriginal Land Council: Karuah	EMBA	Function as department or agency of NSW local council.
130	NSW Local Aboriginal Land Council: Kempsey	EMBA	Function as Indigenous Land Council
131	NSW Local Aboriginal Land Council: La Prouse	EMBA	Function as department or agency of NSW local council.
132	NSW Local Aboriginal Land Council: Merrimans	EMBA	Function as department or agency of NSW local council.
133	NSW Local Aboriginal Land Council: Metropolitan	EMBA	Function as department or agency of NSW local council.
134	NSW Local Aboriginal Land Council: Mogo	EMBA	Function as department or agency of NSW local council.
135	NSW Local Aboriginal Land Council: Nowra	EMBA	Function as department or agency of NSW local council.
136	NSW Local Aboriginal Land Council: Purfleet Taree	EMBA	Function as Indigenous Land Council
137	NSW Local Aboriginal Land Council: Ulladulla	EMBA	Function as department or agency of NSW local council.

Ref	Person/organisation	Geo. area	Function, interest or activity
138	NSW Local Aboriginal Land Council: Wagonga	EMBA	Function as department or agency of NSW local council.
139	NSW Local Aboriginal Land Council: Worimi	EMBA	Function as department or agency of NSW local council.
140	NSW Local Government Area / Council: Bayside	EMBA	Function as department or agency of NSW local council.
141	NSW Local Government Area / Council: Bega Valley	EMBA	Function as department or agency of NSW local council.
142	NSW Local Government Area / Council: Central Coast	EMBA	Function as department or agency of NSW local council.
143	NSW Local Government Area / Council: Eurobodalla	EMBA	Function as department or agency of NSW local council.
144	NSW Local Government Area / Council: Georges River	EMBA	Function as department or agency of NSW local council.
145	NSW Local Government Area / Council: Kempsey	EMBA	Function as department or agency of NSW local council
146	NSW Local Government Area / Council: Kiama	EMBA	Function as department or agency of NSW local council.
147	NSW Local Government Area / Council: Lake Macquarie	EMBA	Function as department or agency of NSW local council.
148	NSW Local Government Area / Council: Mid-Coast	EMBA	Function as department or agency of NSW local council.
149	NSW Local Government Area / Council: Mosman	EMBA	Function as department or agency of NSW local council.
150	NSW Local Government Area / Council: Newcastle	EMBA	Function as department or agency of NSW local council.
151	NSW Local Government Area / Council: North Sydney	EMBA	Function as department or agency of NSW local council.
152	NSW Local Government Area / Council: Northern Beaches	EMBA	Function as department or agency of NSW local council.

Ref	Person/organisation	Geo. area	Function, interest or activity
153	NSW Local Government Area / Council: Port Macquarie - Hastings	EMBA	Function as local government / council.
154	NSW Local Government Area / Council: Port Stephens	EMBA	Function as department or agency of NSW local council.
155	NSW Local Government Area / Council: Randwick	EMBA	Function as local government / council.
156	NSW Local Government Area / Council: Shellharbour	EMBA	Function as department or agency of NSW local council.
157	NSW Local Government Area / Council: Shoalhaven	EMBA	Function as department or agency of NSW local council.
158	NSW Local Government Area / Council: Sutherland Shire	EMBA	Function as department or agency of NSW local council.
159	NSW Local Government Area / Council: Sydney	EMBA	Function as department or agency of NSW local council.
160	NSW Local Government Area / Council: Waverley	EMBA	Function as department or agency of NSW local council.
161	NSW Local Government Area / Council: Wollongong	EMBA	Function as department or agency of NSW local council.
162	NSW Local Government Area / Council: Woollahra	EMBA	Function as department or agency of NSW local council.
163	NTSCORP Limited (NSW)	EMBA	Function as department or agency of NSW local council.
164	Oil Spill Response Limited	EMBA	Function as an organisation industry-funded cooperative which exists to respond to oil spills.
165	Orsted Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
166	Panama II Octopus fishing vessel	ATBA	Activities as Lakes Entrance based commercial fishing boat
167	Parkwind	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
168	Parrdarrama Pungenna Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners

Ref	Person/organisation	Geo. area	Function, interest or activity
169	Pearl Lugger Cruises	EMBA	Organisation as tour company.
170	Peels Lake Cruises	EMBA	Organisation as tour company.
171	Piscari Industries Pty Ltd	ATBA	Activities as commercial fishing company based in Lakes Entrance.
172	Port Franklin Fishermen's Association	EMBA	Organisation for local fishing association.
173	Port Phillip Sea Pilots	EMBA	Organisation of marine pilotage for commercial vessels calling to Melbourne, Geelong, Hastings, Corner Inlet, and back-up pilotage to Portland
174	Qube (operator - Barrie's Beach)	EMBA	Organisation with activities as Barry Beach Port Operator.
175	Relevant Person #192	EMBA	Interests as community member.
176	Relevant Person #298	EMBA	Interests as community member.
177	Relevant Person #329	EMBA	Interests as community member.
178	Relevant Person #356	EMBA	Interests as community member.
179	Relevant Person #389	EMBA	Interests as community member.
180	Relevant Person #507	EMBA	Interests as community member.
181	Relevant Person #508	EMBA	Interests as community member.
182	Relevant Person #509	EMBA	Interests as community member.
183	Relevant Person #510	EMBA	Interests as community member.
184	Relevant Person #534	EMBA	Interests as community member.
185	Relevant Person #541	EMBA	Interests as community member.
186	Relevant Person #559	EMBA	Interests as community member.
187	Relevant Person #560	EMBA	Interests as community member.
188	Relevant Person #561	EMBA	Interests as community member.
189	Relevant Person #562	EMBA	Interests as community member.
190	Relevant Person #564	EMBA	Interests as community member.
191	Relevant Person #565	EMBA	Interests as community member.

Ref	Person/organisation	Geo. area	Function, interest or activity
192	Relevant Person #566	EMBA	Interests as community member.
193	Relevant Person #567	EMBA	Interests as community member.
194	Relevant Person #568	EMBA	Interests as community member.
195	Relevant Person #569	EMBA	Interests as community member.
196	Relevant Person #570	EMBA	Interests as community member.
197	Relevant Person #571	EMBA	Interests as community member.
198	Relevant Person #572	EMBA	Interests as community member.
199	Relevant Person #573	EMBA	Interests as community member.
200	Relevant Person #574	EMBA	Interests as community member.
201	Relevant Person #575	EMBA	Interests as community member.
202	RWE Renewables	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
203	Sail Safari	EMBA	Organisation as sailing charter business.
204	Sale Game & Fishing Association	ATBA	Activities as game fishing association.
205	Save Westernport	EMBA	Interest as community organisation to protect Western Port Bay's wetlands, and support sustainable marine and tourism industries.
206	Scallop Fishermen's Association	ATBA	Activities as a collective of the Scallop Fishing Families and associated support work force based in Lakes Entrance.
207	Sea Myth Fishing Charters	EMBA	Organisation as fishing charter business.
208	Sea Shepherd Australia	EMBA	Interest as an international, non-profit marine conservation organization that campaigns to defend, conserve and protect the world's ocean.
209	Seafood Industry Victoria	ATBA	Activities as a not-for-profit, non-government organisation. SIV is the representative peak body for the Victorian seafood industry, from professional fishers through to wholesale, processors and retail.
210	Seaspray Surf Lifesaving Club	EMBA	Organisation as Surf Lifesaving Club
211	SETFIA Chairman	ATBA	Activities as Chairman of Incorporated association representing commercial fishers in Commonwealth

Ref	Person/organisation	Geo. area	Function, interest or activity
			South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
212	Seven Group Holdings	EMBA	Organisation as shareholder in Beach Energy and has interests in energy assets in Australia.
213	Six Rivers Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners
214	South East Trawl Fishing Industry Association	ATBA	Activities as incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
215	Southerly Ten (<i>Star of the South and Kut-Wut projects</i>)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland
216	Southern Shark Industry Alliance	ATBA	Activities as incorporated association with members from the Southern and Eastern Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
217	Star of the South	EMBA	Organisation as commercial venture proposing an offshore wind farm project of the South Coast of Gippsland.
218	Surfrider Foundation Australia	EMBA	Interest as not for profit sea-roots organisation dedicated to the protection of Australia's waves and beaches through conservation, activism, research and education.
219	TAS Local Government Area / Council: Break O'Day	EMBA	Function as department or agency of Tasmania local council.
220	TAS Local Government Area / Council: Burnie	EMBA	Function as department or agency of Tasmania local council.
221	TAS Local Government Area / Council: Central Coast	EMBA	Function as department or agency of Tasmania local council.
222	TAS Local Government Area / Council: Circular Head	EMBA	Function as department or agency of Tasmania local council.
223	TAS Local Government Area / Council: Devonport	EMBA	Function as department or agency of Tasmania local council.
224	TAS Local Government Area / Council: Dorset	EMBA	Function as department or agency of Tasmania local council.
225	TAS Local Government Area / Council: Flinders	EMBA	Function as department or agency of Tasmania local council.

Ref	Person/organisation	Geo. area	Function, interest or activity
226	TAS Local Government Area / Council: George Town	EMBA	Function as department or agency of Tasmania local council.
227	TAS Local Government Area / Council: Glamorgan-Spring Bay	EMBA	Function as department or agency of Tasmania local council.
228	TAS Local Government Area / Council: Latrobe	EMBA	Function as department or agency of Tasmania local council.
229	TAS Local Government Area / Council: Launceston	EMBA	Function as department or agency of Tasmania local council.
230	TAS Local Government Area / Council: Waratah-Wynyard	EMBA	Function as department or agency of Tasmania local council.
231	TAS Local Government Area / Council: West Tamar	EMBA	Function as department or agency of Tasmania local council.
232	Tasman Council	EMBA	Function as department or agency of Tasmania local council.
233	Tasmanian Aboriginal Centre	EMBA	Organisation representing Traditional Owners
234	Tasmanian Regional Aboriginal Communities Alliance	EMBA	Organisation representing Traditional Owners
235	Tasmanian Seafood Industry Council	EMBA	Organisation representing the interests of wild capture fishers, marine farmers and seafood processors in Tasmania.
236	The Nature Conservancy	EMBA	Interest as Environmental conservation charity whose mission is to conserve the lands and waters on which all life depends.
237	The Wilderness Society	EMBA	Interest as eNGO working to protect, promote and restore wilderness and natural processes across Australia.
238	Trust For Nature	EMBA	Interest as eNGO working to permanently protect habitat on private land to give native plants and animals safe places to live.
239	Tuna Australia Ltd	EMBA	Activities representing statutory fishing right owners, holders, fish processors and sellers, and associate members of the Eastern and Western tuna and billfish fisheries of Australia
240	Victoria Game Fishing Club	ATBA	Activities as governing body for Game Fishing in Victoria.

Ref	Person/organisation	Geo. area	Function, interest or activity
241	Victorian Bays and Inlets Fisheries Association	EMBA	Organisation representing Victoria Bay and Inlet commercial fishers.
242	Victorian Recreational Fishing	ATBA	Activities as organisation representing Victorian Recreational Fishing in Victoria.
243	Victorian Rock Lobster Association	ATBA	Activities as Victorian Rock Lobster fishing industry representative group.
244	Victorian Scallop Industry Association	ATBA	Activities as commercial scallop fishing representative body.
245	Wildlife Victoria	EMBA	Interest as community organisation providing Wildlife Emergency Response.
246	World Wide Fund for Nature	EMBA	Interest as eNGO that works in the field of wilderness preservation and the reduction of human impact on the environment.
247	Yachting Victoria	EMBA	Interest as organisation providing sailing advice for the South East of Australia.

Relevant persons (Regulation 25(1)(e))

Ref	Person/organisation	Geo. area	Function, interest or activity
248	Australian Marine Oil Spill Centre	EMBA	Function as an organisation set up by the petroleum industry to enable a quick and effective response to oil spills around the Australian coastline. Relevant for OPEP.
249	Gippsland Forestec TAFE (Kalmina)	EMBA	Activities as Victorian tertiary institution.
250	National Native Title Tribunal (NNTT)	EMBA	Functions as an independent body established under the Native Title Act 1993 in Australia as a special measure for the advancement and protection of Aboriginal and Torres Strait Islander peoples. It manages applications for and administration of native title in Australia.
251	Port of Hastings	EMBA	Function as responsible for managing the operations at the Port of Hastings, including maintaining the associated port infrastructure.
252	Victorian Regional Channels Authority	EMBA	Function as Victorian State government agency/authority managing commercial navigation in the port waters of Geelong and Hastings.

Appendix E-2 Relevant persons consultation levels

Relevant persons consultation levels for Regulation 25(1)(a) relevant persons

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
1	Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet)	EMBA	Function as a Tasmanian State government agency that aims to protect and promote Tasmania's Aboriginal heritage and facilitate the return of land to Tasmania's Aboriginal people.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
2	Australian Fisheries Management Authority (AFMA)	EMBA	Function as a Commonwealth government agency responsible for management of Commonwealth commercial fisheries from 3-200nm. The OAs overlap with local fisheries.	L2	Esso has applied its methodology and initially assessed AFMA as Level 1 consultation but moved to Level 2 as a result of AFMA advising they have no comments on the JUR P&A EP activity.
3	Australian Hydrographic Office (AHO)	OA	Function as a Commonwealth government agency responsible for publication of nautical charts and other information for safety of ships navigating in Australian waters (including Notices to Mariners).	L1	Esso has applied its methodology and assessed AHO as a Level 1 consultation as they provide Notice to Mariners and therefore have a function in the OA of the planned activity
4	Australian Maritime Safety Authority (AMSA)	EMBA	Function as a Commonwealth government statutory authority responsible for maritime safety, protection of the marine environment including marine pollution and maritime aviation search and rescue.	L1	Esso has applied its methodology and assessed AMSA as a Level 1 consultation as their function is in the OA of the planned activity
5	Bass Coast Shire Council	EMBA	Function as a Victorian local government for Bass Coast Shire. Provides a range of services to	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
			community and is interested in maintaining sustainable communities and business.		as their function is in the EMBA and no impact from planned activity.
6	CarbonNet	ATBA	Function as Victoria government agency to establish a commercial scale Carbon Capture and Storage network in Gippsland, Victoria.	L2	Esso has applied its methodology and assessed CarbonNet as a Level 2 consultation as their function is in the ATBA of the planned activity.
7	Department of Agriculture, Fisheries and Forestry (DAFF)	EMBA	Function as a Commonwealth government department that manages biosecurity risks to Australia for agriculture, fisheries and forestry, industry growth and resilience and sustainability.	L1	Esso has applied its methodology and assessed DAFF as a Level 1 consultation as their function is in the OA of the planned activity
8	Department of Climate Change, Energy, the Environment and Water (DCCEEW)	EMBA	Function as a Commonwealth government department whose role is to help Australia respond to climate change, manage water and energy resources, environment, parks and heritage. They have responsibility for considering sea dumping applications.	L1	Esso has applied its methodology and assessed DCCEEW as a Level 1 consultation as their function is in the OA of the planned activity.
9	Department of Defence	EMBA	Function as Commonwealth department for national defence. The East Sale AirBase is located in Gippsland and has activities over Bass Strait.	L1	Esso has applied its methodology and assessed DoD as a Level 1 consultation as their function is in the OA of the planned activity.
10	Department of Energy, Environment and Climate Action (DEECA) (Agriculture)	EMBA	Function as Victorian State government department is to protect plant, animal and human health from biosecurity threats in Victoria. This includes invasive marine species.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
11	Department of Energy, Environment and Climate Action	EMBA	Function as Victorian State government department to protect and enhance Victoria's coastline and its waters to support business,	L3	Esso has applied its methodology and assessed DJSIR - marine pollution as a Level 3

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
	(DEECA) (Marine and Coasts)		tourism, recreation, wellbeing and biodiversity. It has has the primary responsibility for cetacean entanglements, strandings and vessel strike and wildlife impacted by marine pollutions events like oil spills.		consultation as their function is to provide response in the event of an unplanned activity
12	Department of Industry, Science, Energy and Resources (DISER)	ATBA	Function as Commonwealth government department responsible for minerals and resources, oil and gas, international trade and national security, and radioactive waste. Portfolio contains NOPSEMA, NOPTA, and CSIRO.	L2	Esso has applied its methodology and assessed DISER as a Level 2 consultation as their function is in the ATBA of the planned activity.
13	Department of Jobs, Skills, Industry and Regions (DJSIR)	ATBA	Function as a Victorian State government department for economic recovery and business and industry engagement	L2	Esso has applied its methodology and assessed DJSIR as a Level 2 consultation as their function is in the ATBA of the planned activity.
14	Department of Natural Resources and Environment Tasmania	EMBA	Function as Tasmanian State government department responsible for protection from biosecurity threats to land and water, protection of marine resources, water and agriculture and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
15	Department of Transport and Planning	EMBA	Function as Victorian State government department with primary responsibility for maritime sourced pollution oil spills in Victorian water and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
16	Director of National Parks	ATBA	Function as a Commonwealth entity responsible for the management of Commonwealth terrestrial and marine protected areas.	L2	Esso has applied its methodology and assessed DoNP as a Level 2 consultation as their function is in the ATBA of the planned activity.
17	East Gippsland Catchment Management Authority	EMBA	Function as a Victoria government statutory authority for the integrated management of land, biodiversity and water resources in the region. The Authority also has responsibility for the planning and delivery of river health works, and several statutory activities.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
18	East Gippsland Shire Council	EMBA	Function as Victorian government local council delivering services to community and issuing planning permits for land use and development throughout East Gippsland. Has an interest in maintaining sustainable communities and business.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.
19	East Gippsland Water	EMBA	Function as Victorian government statutory corporation responsible for delivery of water supply and waste water management in East Gippsland,	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
20	Environment Protection Authority Victoria	EMBA	Function as the Victoria’s State environmental regulator and performs oil spill response support functions and conducts incident investigations.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
21	Environmental Protection Agency (Tas)	EMBA	Function as Tasmanian regulator responsible for the environmental protection and management, including ensuring that activities do not cause unacceptable pollution. They also have a function of oil spill response control agency in Tasmanian State waters.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
22	Fire Rescue Victoria	EMBA	Function as fire and rescue service for the state of Victoria. Responsible for marine response associated with fires, chemical spills on ships and in ports, and other marine related emergencies.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
23	Gippsland Ports	ATBA	Function as Victorian statutory authority responsible for five Gippsland Ports, including Lakes Entrance, Port of Corner Inlet and Port Albert.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their function may occur in the ATBA of the planned activity.
24	Gippsland Water	EMBA	Function as Victorian government statutory corporation to deliver fresh, clean drinking water, and manage and treat waste water.	L3	Esso has applied its methodology and assessed Gippsland Water as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
25	Indigenous Land and Sea Corporation	EMBA	Function as a Commonwealth government statutory authority with national responsibilities to assist Aboriginal and Torres Strait Islander people to acquire land and to manage assets to achieve cultural, social, environmental and economic benefits for Indigenous peoples.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
26	Maritime Border Command	EMBA	Function as a Commonwealth government agency is Australia’s principal civil maritime security agency, a de facto coast guard, operating in the maritime domain to ensure compliance with Australia’s maritime legislation by foreign and domestic non-state actors.	L3	Esso has applied its methodology and assessed MBC as a Level 3 consultation as their function is to provide response in the event of an unplanned activity
27	Mornington Peninsula Shire	EMBA	Function as department or agency of Victoria as Local Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.
28	National Offshore Petroleum Titles Administrator (NOPTA)	EMBA	Function as Commonwealth government agency responsible for the day-to-day administration of petroleum & greenhouse gas titles in Commonwealth waters in Australia.	L1	Esso has applied its methodology and assessed NOPTA as a Level 1 consultation as their function is in the OA of the planned activity.
29	Parks Australia	ATBA	Function as Commonwealth government agency responsible for managing Commonwealth parks, reserves and conservation zones.	L2	Esso has applied its methodology and assessed PA as a Level 2 consultation as their function is in the ATBA of the planned activity.
30	Parks Victoria	EMBA	Function as a Victorian State Government agency that manages coastal marine parks and reserves, and coastal areas. They manage significant stretches of land along the Gippsland coastline and some maritime infrastructure in the Gippsland area (e.g. some piers, jetties, berths and ports including Western Port). Support agency for oil spill response.	L3	Esso has applied its methodology and assessed Parks Victoria as a Level 3 consultation as their function is to provide response in the event of an unplanned activity

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
31	Ports Victoria	EMBA	Function as Victorian State government agency that manages the safe transit of vessels into and out of Victoria's commercial ports. It provides maritime expertise, informing the strategic development and operations within Victoria's commercial ports and waterways.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
32	Relevant Person #323	EMBA	Activities as Member of Parliament - State	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
33	Safe Transport Victoria - Maritime	ATBA	Function as a Victorian State government department responsible for conducting audits of Victoria's ports and waterways and work with the entities that manage them to ensure they are safe for all waterway users.	L2	Esso has applied its methodology and assessed STV as a Level 2 consultation as their function is in the ATBA of the planned activity.
34	South Gippsland Shire Council	EMBA	Function as department or agency of Victoria as Local Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity
35	State Emergency Service	EMBA	Function as a Commonwealth government agency responsible for flood, storm, tsunami, earthquake and landslide throughout Australia.	L3	Esso has applied its methodology and assessed SES as a Level 3 consultation as their function is to provide response in the event of an unplanned activity
36	Tasmania Parks and Wildlife Service	EMBA	Function as Tasmanian State Government agency working to conserve the State's natural and	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
			cultural heritage while providing for sustainable use and economic opportunities for the Tasmanian community.		as their activity may occur in the EMBA and no impact from planned activity.
37	Transport for NSW	EMBA	Function as a NSW State government department responsible for NSW's maritime safety and management of transport on coastal waterways. They also fill the function of oil spill response control agency in NSW state waters.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
38	Victorian Fisheries Authority	ATBA	Function as a Victorian State government agency to effectively manage Victoria's fisheries resources. This includes providing support during an emergency that involves cetacean entanglement, strandings and vessel strike; responding to pollution in waterways; respond to marine pest incursions; and preventing noxious aquatic species being brought into Victoria.	L2	Esso has applied its methodology and assessed VFA as a Level 2 consultation as their function is in the ATBA of the planned activity.
39	Wellington Shire Council	EMBA	Function as department or agency of Victoria as Local Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity
40	West Gippsland Catchment Management Authority	EMBA	Function as a Victorian State government statutory authority to manage land and water resources in the West Gippsland region, including estuaries.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.

Relevant persons consultation levels for Regulation 25(1)(b) relevant persons

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
41	Department of Energy, Environment and Climate Action (DEECA)	ATBA	Function as department of the Victorian Government working with industry and the community to develop Victoria's secure and sustainable energy future. Responsible for earth resources exploration, licensing, approval of applications, and enforcement on land and state waters. Responsible for protection of biodiversity and biosecurity on land and in State waters. Has responsibility to approve sea dumping applications in State waters.	L2	Esso has applied its methodology and assessed DEECA as a Level 2 consultation as their function is in the ATBA of the planned activity.

Relevant persons consultation levels for Regulation 25(1)(d) relevant persons

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
42	3D Oil	EMBA	Person or organisation with activities as oil and gas company with licenses offshore from Gippsland.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
43	Aboriginal Heritage Council Tasmania (Report to AHT) (TAS)	EMBA	Statutory council established in 2017 under the Aboriginal Heritage Act 1975. An independent body who advise the Tasmanian Government, land managers and owners on the protection and management of Aboriginal cultural heritage in Tasmania.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
44	Aboriginal Land Council of Tasmania (now directs to TAC)	EMBA	Organisation representing the political and community development aspirations of the Tasmanian Aboriginal community.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
45	Aboriginal Launceston (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
46	AGL Energy (Gippsland Skies)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
47	Aquilla Fishing Charters	EMBA	Person or organisation with activities as local fishing charter business.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
48	Australian Conservation Foundation	EMBA	Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
49	Australian Institute of Marine and Power Engineer	EMBA	Union representing the industrial and professional interests of Marine Engineers in Australia.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
50	Australian Marine Conservation Society (ACMS)	EMBA	National charity dedicated solely to protecting our precious ocean wildlife – a community of ocean lovers across the nation working for healthy seas.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
51	Australian Southern Bluefin Tuna Industry Association	EMBA	Organisation representing the Australian Southern Bluefin Tuna Industry working to maintain a high level of quality and training.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
52	Australian Volunteer Coastguard	EMBA	Organisation responding to a variety of marine incident types and supporting other agencies in events such as marine fire and medical evacuation from vessels.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
53	Australian WildCatch Fishing	ATBA	Activities as business operating five fishing vessels in Gippsland and supports a variety of other Vessels, with the design and construction of Fishing Gear, Crew placement, Quota, licence management and associated administration.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
54	Australian Wildlife Conservancy	EMBA	Interest as Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
55	Australian Workers' Union	EMBA	Activities as negotiating workplace enterprise agreements	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
56	Bass Strait Bait & Tackle Lakes Entrance	EMBA	Organisation as Lakes Entrance based business servicing the recreational fishing industry.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
57	Beach Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
58	Bluefloat	ATBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
59	Boating Industry Association of Victoria	EMBA	Not-for-profit organisation and the peak body representing the recreational and light commercial marine industry.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
60	Bodalla Local Aboriginal Land Council (NSW)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
61	Bunurong Land Council Aboriginal Corporation	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
62	Bush Heritage	EMBA	Interest as a non-profit organisation with headquarters in Melbourne, Australia, that operates throughout Australia.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
63	Cape Barren Island Aboriginal Association Incorporated (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
64	Catchers Trust (Chairman) (NSW)	EMBA	Activities as Chairman of Catchers Trust in NSW, a sounding board for licensed fishermen and a mechanism to distribute profits from Sydney Fish Markets	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
65	Circular Head Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
66	Committee for Gippsland	EMBA	Interests as independent group established to represent all sectors of business, industry and community views to collaboration on regional priorities to benefit Gippsland communities.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
67	Commonwealth Fisheries Association	EMBA	Organisation contributing to the formulation of effective and responsible fisheries policies.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
68	Community Over Mining	EMBA	Interest as non-government organisation covering many topics in Gippsland and around Australia including pollution to air, land and water.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
69	Construction, Forestry, Maritime, Mining and Energy Union	EMBA	Activities as trade union in building and construction, forestry and furnishing products, maritime and mining and energy production.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
70	Cooper Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
71	Corio Generation Limited	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
72	Corner Inlet Fisheries Habitat Association	EMBA	Person or organisation to facilitate and encourage better habitat protection and stewardship of the local marine resource.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
73	Country Fire Authority (Region 10)	EMBA	Volunteer organisation fire service responsible for fire suppression, rescues, and response to other accidents and hazards across most of the state Victoria, Australia	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
74	East Gippsland Estuarine Fishermen's Association	EMBA	Person or organisation representing the interests of the Gippsland Lakes Estuarine fishers.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
75	Eastern Victorian Sea Urchin Divers Association	EMBA	Organisation representing Sea Urchin Divers.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
76	Eastern Zone Abalone Industry Association	ATBA	Activities as the wild catch abalone industry sector that operates in the Mallacoota regions of Victoria.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
77	Elders Council of Tasmania Aboriginal Corporation	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
78	Electrical Trades Union	EMBA	Activities as contractors - services include closure studies and decommissioning, deconstruction and demolition, civil engineering and construction, landscaping and external works, resource recovery and waste management, asbestos removal and disposal, site remediation, rehabilitation and revegetation, and heavy plant rental.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
79	Emperor Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
80	Environment Victoria	EMBA	Interest as an independent and not-for-profit group campaigning for a safe climate, healthy rivers and sustainable living.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
81	Extinction Rebellion Australia	EMBA	Interest as eNGO focused on persuading governments to act on climate and ecological matters.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
82	Far Out Charters	EMBA	Organisation operating offshore fishing charters based out of Lakes Entrance.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
83	First Tasmanians Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
84	Fishing Tribunal	ATBA	Activities as independent group established to consider commercial fishing vessel damage claims resulting from interaction with Esso equipment/facilities.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
85	Flinders Island Aboriginal Association Inc (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
86	Friends of the Earth	EMBA	Interest as eNGO working to protect and/or educate about the natural environment.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
87	Game Fishing Association of Victoria	ATBA	Activities as the governing body for Game Fishing in Victoria.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
88	Gippsland Lakes Fishing Club	ATBA	Activities as a recreational fishing club based in Lakes Entrance.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
89	Gippsland Lakes Yacht Club	EMBA	Organisation sailing club in East Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
90	GreenPeace	EMBA	Interest as eNGO campaigning for a green and peaceful future.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
91	Gulaga and Biamanga Joint Authority (NSW)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
92	GunaiKurnai Land and Waters Aboriginal Corporation	EMBA	Function, interests and activities as Registered Aboriginal Party that represents the GunaiKurnai people, the Traditional Owners of our Country, as determined by the Victorian Aboriginal Heritage Council under the Aboriginal Heritage Act 2006.	L1	Esso has applied its methodology and assessed GLaWAC as a Level 1 consultation as there may be connections to sea country within the OA of the planned activity.
93	H2O Tours & Adventures	EMBA	Organisation fishing charter operator.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
94	Hastings Coastal Advisory Group	EMBA	Organisation advising Council in the use or development, planning, management, protecting and enhancing the Shire's coastlines	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
95	Hewardia	ATBA	Activities as Lakes Entrance based commercial fishing boat	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
96	High Sea Wind	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

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97	Iberdrola Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
98	Independent chair of Fishing Tribunal	ATBA	Activities as Independent Chair of Esso's Fishing Tribunal	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
99	King Island Shire Council	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
100	Lake Tyers Aboriginal Trust	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
101	Lake Tyers Beach Angling Club	EMBA	Organisation as recreational fishing club based in Lakes Tyers.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
102	Lakes Charter Fishing	EMBA	Organisation as fishing charter operator.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
103	Lakes Entrance Fishermen Limited	ATBA	Activities as Fishing co-operative representing the interests of Lakes Entrance based commercial fishing vessels. Represents Lakes Entrance commercial fishing by providing a full-service unloading facility to the local fishing fleet. From here, fresh seafood is distributed to local shops.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
104	Lakes Entrance Offshore Charters	EMBA	Organisation as fishing charter operator.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
105	Lakes Entrance Scallop Fishing Industry Association	ATBA	Activities as commercial scallop fishing industry group.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
106	Lakes Explorer	EMBA	Organisation as tour operator.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
107	Life Saving Victoria	EMBA	Organisation working with communities, educational institutions, government agencies, businesses and the broader aquatic industry to prevent aquatic related death and injury in all Victorian communities.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
108	Marine and Safety Tasmania	EMBA	Organisation established to ensure the safe operation of vessels, provide and manage marine	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
			facilities and manage environmental issues relating to vessels.		as their activity may occur in the EMBA and no impact from planned activity.
109	Maritime Industry Australia Limited	ATBA	Activities as organisation established to be the voice and advocate of the Australian maritime industry.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
110	Maritime Union of Australia	EMBA	Activities as union for waterside workers, seafarers, port workers, professional divers, and office workers associated with Australian ports	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
111	Melythina tiakana warrana Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
112	Member of Fishing Tribunal	ATBA	Activities as Member of Esso's Fishing Tribunal	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
113	Mitchelson Fisheries	ATBA	Activities as commercial fishing company based in Lakes Entrance who represent themselves.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
114	Navigator North Project Pty Ltd	ATBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
115	New South Wales Aboriginal Land Council	EMBA	Organisation as NSW State peak representative body in Aboriginal affairs.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
116	NSW Local Aboriginal Land Council: Awabakal	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
117	NSW Local Aboriginal Land Council: Bahtabah	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
118	NSW Local Aboriginal Land Council: Batemans Bay	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
119	NSW Local Aboriginal Land Council: Bega	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
120	NSW Local Aboriginal Land Council: Birpai	EMBA	Function as Indigenous Land Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
121	NSW Local Aboriginal Land Council: Bodalla	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
122	NSW Local Aboriginal Land Council: Bunyah	EMBA	Function as Indigenous Land Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
123	NSW Local Aboriginal Land Council: Cobowra	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
124	NSW Local Aboriginal Land Council: Darkinjung	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
125	NSW Local Aboriginal Land Council: Eden	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
126	NSW Local Aboriginal Land Council: Forster	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
127	NSW Local Aboriginal Land Council: Illawarra	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
128	NSW Local Aboriginal Land Council: Jerrinja	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
129	NSW Local Aboriginal Land Council: Karuah	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
130	NSW Local Aboriginal Land Council: Kempsey	EMBA	Function as Indigenous Land Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
131	NSW Local Aboriginal Land Council: La Perouse	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
132	NSW Local Aboriginal Land Council: Merrimans	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
133	NSW Local Aboriginal Land Council: Metropolitan	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
134	NSW Local Aboriginal Land Council: Mogo	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
135	NSW Local Aboriginal Land Council: Nowra	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
136	NSW Local Aboriginal Land Council: Purfleet Taree	EMBA	Function as Indigenous Land Council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
137	NSW Local Aboriginal Land Council: Ulladulla	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
138	NSW Local Aboriginal Land Council: Wagonga	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
139	NSW Local Aboriginal Land Council: Worimi	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
140	NSW Local Government Area / Council: Bayside	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
141	NSW Local Government Area / Council: Bega Valley	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
142	NSW Local Government Area / Council: Central Coast	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
143	NSW Local Government Area / Council: Eurobodalla	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
144	NSW Local Government Area / Council: Georges River	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
145	NSW Local Government Area / Council: Kempsey	EMBA	Function as department or agency of NSW local council	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
146	NSW Local Government Area / Council: Kiama	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
147	NSW Local Government Area / Council: Lake Macquarie	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
148	NSW Local Government Area / Council: Mid-Coast	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
149	NSW Local Government Area / Council: Mosman	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
150	NSW Local Government Area / Council: Newcastle	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
151	NSW Local Government Area / Council: North Sydney	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
152	NSW Local Government Area / Council: Northern Beaches	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
153	NSW Local Government Area / Council: Port Macquarie - Hastings	EMBA	Function as local government / council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
154	NSW Local Government Area / Council: Port Stephens	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
155	NSW Local Government Area / Council: Randwick	EMBA	Function as local government / council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
156	NSW Local Government Area / Council: Shellharbour	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
157	NSW Local Government Area / Council: Shoalhaven	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
158	NSW Local Government Area / Council: Sutherland Shire	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
159	NSW Local Government Area / Council: Sydney	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
160	NSW Local Government Area / Council: Waverley	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
161	NSW Local Government Area / Council: Wollongong	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
162	NSW Local Government Area / Council: Woollahra	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
163	NTSCORP Limited (NSW)	EMBA	Function as department or agency of NSW local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
164	Oil Spill Response Limited	EMBA	Function as an organisation industry-funded cooperative which exists to respond to oil spills.	L3	Esso has applied its methodology and assessed OSRL as a Level 3 consultation as their function is to provide response in the event of an unplanned activity
165	Orsted Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
166	Panama II Octopus fishing vessel	ATBA	Activities as Lakes Entrance based commercial fishing boat	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
167	Parkwind	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
168	Parrdarrama Pungenna Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
169	Pearl Lugger Cruises	EMBA	Organisation as tour company.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
170	Peels Lake Cruises	EMBA	Organisation as tour company.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
171	Piscari Industries Pty Ltd	ATBA	Activities as commercial fishing company based in Lakes Entrance.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
172	Port Franklin Fishermen's Association	EMBA	Organisation for local fishing association.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
173	Port Phillip Sea Pilots	EMBA	Organisation of marine pilotage for commercial vessels calling to Melbourne, Geelong, Hastings, Corner Inlet, and back-up pilotage to Portland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
174	Qube (operator - Barrie's Beach)	EMBA	Organisation with activities as Barry Beach Port Operator.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
175	Relevant Person #192	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
176	Relevant Person #298	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
177	Relevant Person #329	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
178	Relevant Person #356	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
179	Relevant Person #389	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
180	Relevant Person #507	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
181	Relevant Person #508	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
182	Relevant Person #509	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
183	Relevant Person #510	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
184	Relevant Person #534	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
185	Relevant Person #541	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
186	Relevant Person #559	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
187	Relevant Person #560	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
188	Relevant Person #561	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
189	Relevant Person #562	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
190	Relevant Person #564	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
191	Relevant Person #565	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
192	Relevant Person #566	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
193	Relevant Person #567	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
194	Relevant Person #568	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
195	Relevant Person #569	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
196	Relevant Person #570	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
197	Relevant Person #571	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
198	Relevant Person #572	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
199	Relevant Person #573	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
200	Relevant Person #574	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
201	Relevant Person #575	EMBA	Interests as community member.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
202	RWE Renewables	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
203	Sail Safari	EMBA	Organisation as sailing charter business.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
204	Sale Game & Fishing Association	ATBA	Activities as game fishing association.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
205	Save Westernport	EMBA	Interest as community organisation to protect Western Port Bay's wetlands, and support sustainable marine and tourism industries.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
206	Scallop Fishermen's Association	ATBA	Activities as a collective of the Scallop Fishing Families and associated support work force based in Lakes Entrance.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
207	Sea Myth Fishing Charters	EMBA	Organisation as fishing charter business.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
208	Sea Shepherd Australia	EMBA	Interest as an international, non-profit marine conservation organization that campaigns to defend, conserve and protect the world's ocean.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
209	Seafood Industry Victoria	ATBA	Activities as a not-for-profit, non-government organisation. SIV is the representative peak body for the Victorian seafood industry, from professional fishers through to wholesale, processors and retail.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.

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210	Seaspray Surf Lifesaving Club	EMBA	Organisation as Surf Lifesaving Club	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
211	SETFIA Chairman	ATBA	Activities as Chairman of Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
212	Seven Group Holdings	EMBA	Organisation as shareholder in Beach Energy and has interests in energy assets in Australia.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
213	Six Rivers Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
214	South East Trawl Fishing Industry Association	ATBA	Activities as incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
215	Southerly Ten (<i>Star of the South and Kut-Wut projects</i>)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
216	Southern Shark Industry Alliance	ATBA	Activities as incorporated association with members from the Southern and Eastern Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
217	Star of the South	EMBA	Organisation as commercial venture proposing an offshore wind farm project of the South Coast of Gippsland.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
218	Surfrider Foundation Australia	EMBA	Interest as not for profit sea-roots organisation dedicated to the protection of Australia's waves and beaches through conservation, activism, research and education.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
219	TAS Local Government Area / Council: Break O'Day	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
220	TAS Local Government Area / Council: Burnie	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
221	TAS Local Government Area / Council: Central Coast	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
222	TAS Local Government Area / Council: Circular Head	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
223	TAS Local Government Area / Council: Devonport	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
224	TAS Local Government Area / Council: Dorset	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
225	TAS Local Government Area / Council: Flinders	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
226	TAS Local Government Area / Council: George Town	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
227	TAS Local Government Area / Council: Glamorgan-Spring Bay	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
228	TAS Local Government Area / Council: Latrobe	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
229	TAS Local Government Area / Council: Launceston	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
230	TAS Local Government Area / Council: Waratah-Wynyard	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
231	TAS Local Government Area / Council: West Tamar	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
232	Tasman Council	EMBA	Function as department or agency of Tasmania local council.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
233	Tasmanian Aboriginal Centre	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
234	Tasmanian Regional Aboriginal Communities Alliance	EMBA	Organisation representing Traditional Owners	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
235	Tasmanian Seafood Industry Council	EMBA	Organisation representing the interests of wild capture fishers, marine farmers and seafood processors in Tasmania.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
236	The Nature Conservancy	EMBA	Interest as Environmental conservation charity whose mission is to conserve the lands and waters on which all life depends.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
237	The Wilderness Society	EMBA	Interest as eNGO working to protect, promote and restore wilderness and natural processes across Australia.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may occur in the EMBA and no impact from planned activity.
238	Trust For Nature	EMBA	Interest as eNGO working to permanently protect habitat on private land to give native plants and animals safe places to live.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
239	Tuna Australia Ltd	EMBA	Activities representing statutory fishing right owners, holders, fish processors and sellers, and associate members of the Eastern and Western tuna and billfish fisheries of Australia	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as no active fishing in OA.

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240	Victoria Game Fishing Club	ATBA	Activities as governing body for Game Fishing in Victoria.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
241	Victorian Bays and Inlets Fisheries Association	EMBA	Organisation representing Victoria Bay and Inlet commercial fishers.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
242	Victorian Recreational Fishing	ATBA	Activities as organisation representing Victorian Recreational Fishing in Victoria.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
243	Victorian Rock Lobster Association	ATBA	Activities as Victorian Rock Lobster fishing industry representative group.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
244	Victorian Scallop Industry Association	ATBA	Activities as commercial scallop fishing representative body.	L2	Esso has applied its methodology and assessed person or organisation as a Level 2 consultation as their activity may occur in the ATBA of the planned activity.
245	Wildlife Victoria	EMBA	Interest as community organisation providing Wildlife Emergency Response.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
246	World Wide Fund for Nature	EMBA	Interest as eNGO that works in the field of wilderness preservation and the reduction of human impact on the environment.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
247	Yachting Victoria	EMBA	Interest as organisation providing sailing advice for the South East of Australia.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.

Relevant persons consultation levels for Regulation 25(1)(e) relevant persons

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
248	Australian Marine Oil Spill Centre	EMBA	Function as an organisation set up by the petroleum industry to enable a quick and effective response to oil spills around the Australian coastline. Relevant for OPEP.	L3	Esso has applied its methodology and assessed AMOSC as a Level 3 consultation as their function is to provide response in the event of an unplanned activity
249	Gippsland Forestec TAFE (Kalmina)	EMBA	Activities as Victorian tertiary institution.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.
250	National Native Title Tribunal (NNTT)	EMBA	Functions as an independent body established under the Native Title Act 1993 in Australia as a special measure for the advancement and protection of Aboriginal and Torres Strait Islander	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.

Ref	Person/organisation	Geo. area	Function, interest or activity	Classification Level	Classification justification
			peoples. It manages applications for and administration of native title in Australia.		
251	Port of Hastings	EMBA	Function as responsible for managing the operations at the Port of Hastings, including maintaining the associated port infrastructure.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.
252	Victorian Regional Channels Authority	EMBA	Function as Victorian State government agency/authority managing commercial navigation in the port waters of Geelong and Hastings.	L3	Esso has applied its methodology and assessed person or organisation as a Level 3 consultation as their function may be relevant in the event of an unplanned activity.

Appendix E-3 Consultation report (Summary)

Consultation report (Summary) for Regulation 25(1)(a) relevant persons

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii)	Reg 34(g) (ii)	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
1	Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet)	EMBA	Function as a Tasmanian State government agency that aims to protect and promote Tasmania's Aboriginal heritage and facilitate the return of land to Tasmania's Aboriginal people.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to the Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet) on the 29th September 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 29th September and continued until this submission in August 2024.</p> <p>Esso has provided the Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet) with the opportunity to provide feedback in a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary.	To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
2	Australian Fisheries Management Authority (AFMA)	EMBA	Function as a Commonwealth government agency responsible for management of Commonwealth commercial fisheries from 3-200nm. The OAs overlap with local fisheries.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to AFMA on the 23 June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed</p>	In July 2023 AFMA responded to Esso's consultation email providing information on the activity and encouraged Esso to engage directly with relevant industry associations for this area of operation.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide notifications to AFMA and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided the opportunity for feedback to provide feedback in a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Esso has addressed AFMA's response, confirming that Esso has engaged directly with relevant industry associations.			Area at the commencement, duration and/or end of the activity as necessary. No additional measures or controls are required.	on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1). From 07-Jul-23 Email Relevant person encouraging EAPL to engage directly with relevant industry associations. From 11-Jul-23 Email Acknowledgement of response To 11-Jul-23 Email EAPL responded to relevant person: I appreciate you taking the time to respond and for the information you've provided. I'll ensure we engage with everyone you've listed below. To 11-Jul-23 Email Email sent to introduce the Esso Consultation Hub To 29-Sep-23 Email Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. To 08-Oct-23 Email Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates. From 19-Oct-23 Email AFMA advised they have no specific comments on the proposals but encourage EAPL to talk directly with commonwealth fishing operators in the area. To 28-Mar-24 Email Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2). To 06-Jul-24 Email Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.			
3	Australian Hydrographic Office (AHO)	OA	Function as a Commonwealth government agency responsible for publication of nautical charts and other information for safety of ships navigating in Australian waters (including Notices to Mariners).	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to AHO on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed	AHO responded confirming receipt of consultation emails providing information on the activity in June 2023, July 2023 and October 2023. Request from AHO to be kept informed of activity start and end dates.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide notifications to AHO at the commencement, duration and/or end of the activity as necessary. No additional measures or	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided AHO with the opportunity to provide feedback over a 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Esso Responded that it will continue to notify AHO of activity start and end dates as outlined in the EP. No further follow up or action required.		controls are required.				on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										From	23-Jun-23	Email	Automated acknowledgement of email on offshore activities / Esso Consultation Questionnaire.
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	12-Jul-23	Email	Please accept this email as acknowledgement that your email has been received by the AHO. The data you have supplied will now be registered, assessed, prioritised and validated in preparation for updating our Navigational Charting products. These adhere to International and Australian Charting Specifications and standards. These standards may result in some data generalisation or filtering due to the scale of existing charts, proximity to other features, and the level of risk a reported feature presents to mariners. Kind Regards Australian Hydrographic Service
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	24-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including consultation closing dates requesting feedback as a user of the sea
										From	25-Oct-23	Email	Relevant Person responded to EAPL request for feedback on current activities.
										To	25-Oct-23	Email	Response to feedback email
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
4	Australian Maritime Safety Authority (AMSA)	EMBA	Function as a Commonwealth government statutory authority responsible for maritime safety, protection of the marine environment including marine pollution and maritime aviation search and rescue.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to AMSA on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided the opportunity for feedback over a 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide notifications to AMSA at the commencement, duration and/or end of the activity as necessary.	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	23-Jul-24	Email	Jack-Up Rig - Well Plug and Abandonment activities - local and support craft will be encountered in the area during activities. Notification instructions.
5	Bass Coast Shire Council	EMBA	Function as a Victorian local government for Bass Coast Shire. Provides a range of services to community and is interested in maintaining sustainable communities and business.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso invited the Shire council to attend a community drop in session in April 2023. - Esso sent an email to Bass Coast Shire Council on the 23rd 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date.</p> <p>- Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p> <p>- Esso sent multiple follow up emails seeking feedback on the proposed activity.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided the Bass Coast Shire Council with the opportunity to provide feedback in a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>- Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan.
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
6	CarbonNet	ATBA	Function as Victoria government agency to establish a commercial scale Carbon Capture and Storage network in Gippsland, Victoria.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Esso sent an email to CarbonNet Australia on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided CarbonNet with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
7	Department of Agriculture, Fisheries and Forestry (DAFF)	EMBA	Function as a Commonwealth government department that manages biosecurity risks to Australia for agriculture, fisheries and forestry, industry growth and resilience and sustainability.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to DAFF on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided DAFF with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of	Esso Received a response from DAFF informing of new contact details for the Department.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	24-Aug-23	Email	EAPL contacting relevant person to confirm correct contact details and share Esso Consultation Hub and Questionnaire.
										From	28-Aug-23	Email	Relevant Person advising they will attempt to provide contact details.
										To	07-Sep-23	Email	EAPL requested updated contact details.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Esso sent multiple follow up emails seeking feedback on the proposed activity.	each response' to the right of this table for further details.					From	05-Oct-23	Email	Relevant Person provided updated contact details and updated consultation database accordingly.
										To	06-Oct-23	Email	To help us better understand what activities you're interested in, how you want to be consulted, and any questions or feedback you may have, please complete the Esso Consultation Questionnaire in the Esso Consultation Hub. If there is anyone you know who may be interested in our activities, please feel free to share this information with them. We look forward to hearing from you and providing you with updates about decommissioning and other activities that we are undertaking in Bass Strait.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
8	Department of Climate Change, Energy, the Environment and Water (DCCEEW)	EMBA	Function as a Commonwealth government department whose role is to help Australia respond to climate change, manage water and energy resources, environment, parks and heritage. They have responsibility for considering sea dumping applications.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to DCCEEW on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided DCCEEW with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
										From	11-Jul-24	Email	The Stakeholder does not require further notification of progress made in relation to this activity unless details regarding the activity change and result in an overlap with or new impact to a marine park, or for emergency responses.
9	Department of Defence	EMBA	Function as Commonwealth department for national defence. The East Sale AirBase is located in Gippsland and has activities over Bass Strait.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to DoD on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	04-Oct-23	Email	Response to completing Esso Consultation Questionnaire

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso has provided DoD with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
10	Department of Energy, Environment and Climate Action (DEECA) (Agriculture)	EMBA	Function as Victorian State government department is to protect plant, animal and human health from biosecurity threats in Victoria. This includes invasive marine species.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to DEECA on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023 and Information Bulletin #2 (Appendix F-2) in October 2023. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided DEECA with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
11	Department of Energy, Environment and Climate Action	EMBA	Function as Victorian State government department to protect and enhance Victoria's coastline and its waters to support business,	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
	(DEECA) (Marine and Coasts)		tourism, recreation, wellbeing and biodiversity. It has has the primary responsibility for cetacean entanglements, strandings and vessel strike and wildlife impacted by marine pollutions events like oil spills.	provided as summarised below: - Esso sent an email to DEECA on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023 and Information Bulletin #2 (Appendix F-2) in October 2023. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided DJPR with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.				No additional measures or controls are required.				- SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
12	Department of Industry, Science, Energy and Resources (DISER)	ATBA	Function as Commonwealth government department responsible for minerals and resources, oil and gas, international trade and national security, and radioactive waste. Portfolio contains NOPSEMA, NOPTA, and CSIRO.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent email on the 8th October 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	this submission in August 2024. Esso has provided the opportunity for feedback over a period greater than 30 days.								
13	Department of Jobs, Skills, Industry and Regions (DJSIR)	ATBA	Function as a Victorian State government department for economic recovery and business and industry engagement	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Esso sent an email to DJPR on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided DJPR with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
14	Department of Natural Resources and Environment Tasmania	EMBA	Function as Tasmanian State government department responsible for protection from biosecurity threats to land and water, protection of marine resources, water and agriculture and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Esso sent an email to the Department of Natural Resources and Environment Tasmania on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023 and Information Bulletin #2 (Appendix F-2) in March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided the Department of Natural Resources and Environment Tasmania with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
15	Department of Transport and Planning	EMBA	Function as Victorian State government department with primary responsibility for maritime sourced pollution oil spills in Victorian water and primary responsibility for wildlife impacted by marine pollution in the relevant state waters.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the Department of Transport and Planning on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided the Department of Transport and Planning with the opportunity to provide feedback over an 11-month period.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
16	Director of National Parks	ATBA	Function as a Commonwealth entity responsible for the management of Commonwealth terrestrial and marine protected areas.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the Director of National Parks on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided the Director of National Parks with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary. No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
17	East Gippsland Catchment Management Authority	EMBA	Function as a Victoria government statutory authority for the integrated management of land, biodiversity and water resources in the region. The Authority also has responsibility for the planning and delivery of river health works, and several statutory activities.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the East Gippsland Catchment Management Authority on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary. No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided the East Gippsland Catchment Management Authority with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
18	East Gippsland Shire Council	EMBA	Function as Victorian government local council delivering services to community and issuing planning permits for land use and development throughout East Gippsland. Has an interest in maintaining sustainable communities and business.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the East Gippsland Shire Council on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided the East Gippsland Shire Council	An receipt of acknowledgement was received. The Council also responded to the Esso Questionnaire and expressed some interest in the possible job opportunities for the region. Esso maintains an ongoing dialogue with local councils in regards to job opportunities in the area.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	13-Jul-23	Questionnaire	Response to Slido RPQ - Interested in all activities. Interested in job opportunities.
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
19	East Gippsland Water	EMBA	Function as Victorian government statutory corporation responsible for delivery of water supply and waste water management in East Gippsland,	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the East Gippsland Water on the 11th July 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent follow up emails	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 11th July 2023 and continued until this submission in August 2024. Esso has provided the East Gippsland Water with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				seeking feedback on the proposed activity.	each response' to the right of this table for further details.								
20	Environment Protection Authority Victoria	EMBA	Function as the Victoria's State environmental regulator and performs oil spill response support functions and conducts incident investigations.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to the EPA Authority on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided the EPA with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	11-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
21	Environmental Protection Agency (Tas)	EMBA	Function as Tasmanian regulator responsible for the environmental protection and management, including ensuring that activities do not cause unacceptable pollution. They also have a function of oil spill response control agency in Tasmanian State waters.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to the EPA Authority on the 29th September 2023 with links to the Esso Consultation Hub on the public 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date.</p> <ul style="list-style-type: none"> - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided the EPA with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	02-Apr-24	Email	Esso is sending the Stakeholder JUR P&A Quick Reference Information and asking the Stakeholder for feedback. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Apr-24	Email	Esso referring the Stakeholder to the previous email as part of consultation obligations.
										From	08-Apr-24	Email	Response to request for feedback on JUR P&A Quick Reference Information - extension of review time advised.
										To	11-Apr-24	Email	Correct link to InfoBulletin - JUR - P&A provided
										From	11-Apr-24	Email	Stakeholder having issues accessing the information links in the Jack Up Rig P&A campaign email.
										From	11-Apr-24	Email	Stakeholder has read the guide supplied and based on the information made some queries.
										To	23-Apr-24	Email	Esso has replied to the Stakeholder questions about the Jack Up Rig P&A.
										From	24-Apr-24	Email	Stakeholder would be interested in reading the response for Kent Group and Tactical plans for Flinders.
										To	30-Apr-24	Email	Esso has sent through the TRPs for Kent Group and for Flinders to the Stakeholder.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
22	Fire Rescue Victoria	EMBA	Function as fire and rescue service for the state of Victoria. Responsible for marine response associated with fires, chemical spills on ships and in ports, and other marine related emergencies.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to Fire Rescue Victoria on the 8th October 2023 with links to the Esso Consultation Hub on the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Fire Rescue Victoria with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
23	Gippsland Ports	ATBA	Function as Victorian statutory authority responsible for five Gippsland Ports, including Lakes Entrance, Port of Corner Inlet and Port Albert.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso invited Gippsland Ports to attend a community drop in session in April 2023. - Esso sent an email to Gippsland Ports on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced April 2023 and continued until this submission in August 2024. Esso has provided the Gippsland Ports with the opportunity to provide feedback over a 13-month period.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
24	Gippsland Water	EMBA	Function as Victorian government statutory corporation to deliver fresh, clean drinking water, and manage and treat waste water.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the Gippsland Water on the 11th July 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 11th July 2023 and continued until this submission in August 2024. Esso has provided Gippsland Water with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
25	Indigenous Land and Sea Corporation	EMBA	Function as a Commonwealth government statutory authority with national responsibilities to assist Aboriginal and Torres Strait Islander people to acquire land and to manage assets to achieve cultural, social, environmental and economic benefits for Indigenous peoples.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to the Indigenous Land and Sea Corporation on the 29th September 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided the Indigenous Land and Sea Corporation with the opportunity to provide feedback over an 8 month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
26	Maritime Border Command	EMBA	Function as a Commonwealth government agency is Australia's principal civil maritime security agency, a de facto coast guard, operating in the maritime domain to ensure compliance with Australia's maritime legislation by foreign and domestic non-state actors.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to Maritime Border Command on the 8th October 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 8th July</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	2024 and continued until this submission in August 2024. Esso has provided Maritime Border Command with the opportunity to provide feedback over a 30 day period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
27	Mornington Peninsula Shire	EMBA	Function as department or agency of Victoria as Local Council	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Emails were issued containing links to Information Bulletin #3 (Appendix F-3) in July 2024.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 9 July 2024 and continued until this submission in August 2024. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
28	National Offshore Petroleum Titles Administrator (NOPTA)	EMBA	Function as Commonwealth government agency responsible for the day-to-day administration of petroleum & greenhouse gas titles in Commonwealth waters in Australia.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to NOPTA on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes,	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date.</p> <ul style="list-style-type: none"> - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NOPTA with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
29	Parks Australia	ATBA	Function as Commonwealth government agency responsible for managing Commonwealth parks, reserves and conservation zones.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to Parks Australia on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Parks Australia with the opportunity to provide feedback over an 11-month period.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
30	Parks Victoria	EMBA	Function as a Victorian State Government agency that manages coastal marine parks and reserves, and coastal areas. They manage significant stretches of land along the Gippsland coastline and some maritime infrastructure in the Gippsland area (e.g. some piers, jetties, berths and ports including Western Port). Support agency for oil spill response.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to Parks Victoria on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided Parks Victoria with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
31	Ports Victoria	EMBA	Function as Victorian State government agency that manages the safe transit of vessels into and out of Victoria's commercial ports. It provides maritime expertise, informing the strategic development and operations within Victoria's commercial ports and waterways.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to Ports Victoria on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided Ports Victoria with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
32	Relevant Person #323	EMBA	Activities as Member of Parliament - State	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to RP323 on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023 and Information Bulletin #2 (Appendix F-2) in October 2023. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided RP323 with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
33	Safe Transport Victoria - Maritime	ATBA	Function as a Victorian State government department responsible for conducting audits of Victoria's ports and waterways and work with the entities that manage them to ensure they are safe for all waterway users.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Esso sent an email to Safe Transport Victoria on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided to Safe Transport Victoria with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
34	South Gippsland Shire Council	EMBA	Function as department or agency of Victoria as Local Council	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Emails were issued containing links to Information Bulletin #3 (Appendix F-3) in July 2024.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 6 July 2024</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					and continued until this submission in August 2024. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
35	State Emergency Service	EMBA	Function as a Commonwealth government agency responsible for flood, storm, tsunami, earthquake and landslide throughout Australia.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to State Emergency Service on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided to State Emergency Service with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
36	Tasmania Parks and Wildlife Service	EMBA	Function as Tasmanian State Government agency working to conserve the State's natural and cultural heritage while providing for sustainable use and economic opportunities for the Tasmanian community.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to Tasmania Parks and Wildlife Service on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date.</p> <ul style="list-style-type: none"> - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity. 	<p>make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided to Tasmania Parks and Wildlife Service with the opportunity to provide feedback over an 11-month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
37	Transport for NSW	EMBA	Function as a NSW State government department responsible for NSW's maritime safety and management of transport on coastal waterways. They also fill the function of oil spill response control agency in NSW state waters.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to Transport for NSW on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided to Transport for NSW with the opportunity to provide feedback over an 11-month period.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
38	Victorian Fisheries Authority	ATBA	Function as a Victorian State government agency to effectively manage Victoria's fisheries resources. This includes providing support during an emergency that involves cetacean entanglement, strandings and vessel strike; responding to pollution in waterways; respond to marine pest incursions; and preventing noxious aquatic species being brought into Victoria.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the VFA on the 23rd June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided to the VFA with the opportunity to provide feedback over an 11-month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
39	Wellington Shire Council	EMBA	Function as department or agency of Victoria as Local Council	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Emails were issued containing links to Information Bulletin #3 (Appendix F-3) in July 2024.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 6 July 2024 and continued until this submission in August 2024. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
40	West Gippsland Catchment Management Authority	EMBA	Function as a Victorian State government statutory authority to manage land and water resources in the West Gippsland region, including estuaries.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent an email to the West Gippsland Catchment Management Authority on the 29th September 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent multiple follow up emails seeking feedback on the proposed activity.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 29th September 2023 and continued until this submission in August 2024. Esso has provided the West Gippsland Catchment Management Authority with the opportunity to provide feedback over an 8 month period. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	Esso will provide updates of the activity as necessary. No additional measures or controls are required.	To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation closing dates. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Consultation report (Summary) for Regulation 25(1)(b) relevant persons

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
41	Department of Energy, Environment and Climate Action (DEECA)	ATBA	Function as department of the Victorian Government working with industry and the community to develop Victoria's secure and sustainable energy future. Responsible for earth resources exploration, licensing, approval of applications, and enforcement on land and state waters. Responsible for protection of biodiversity and biosecurity on land and in State waters. Has responsibility to approve sea dumping applications in State waters.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent an email to DEECA on the 23 June 2023 with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #1 (Appendix F-1) in June 2023, Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso sent follow up emails seeking feedback on the proposed activity. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided DEECA with the opportunity to provide feedback over an 11 month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No Objection or claims on this activity	Not applicable as no objections or claims were made	<p>Esso will provide updates of the activity as necessary.</p> <p>No additional measures or controls are required.</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan.
										To	11-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Consultation report (Summary) for Regulation 25(1)(d) relevant persons

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
42	3D Oil	EMBA	Person or organisation with activities as oil and gas company with licenses offshore from Gippsland.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to 3D Oil on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided 3D Oil with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2). Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
43	Aboriginal Heritage Council Tasmania (Report to AHT) (TAS)	EMBA	Statutory council established in 2017 under the Aboriginal Heritage Act 1975. An independent body who	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
			advise the Tasmanian Government, land managers and owners on the protection and management of Aboriginal cultural heritage in Tasmania.	Sufficient information has been provided as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback provided to Aboriginal Heritage Council Tasmania on 29 September 2023 based on their function, interest and activities. - Email issued containing link to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024. Esso has provided Aboriginal Heritage Council Tasmania with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
44	Aboriginal Land Council of Tasmania (now directs to TAC)	EMBA	Organisation representing the political and community development aspirations of the Tasmanian Aboriginal community.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback provided to Aboriginal Land Council of Tasmania on 29 September 2023 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024. Esso has provided	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					<p>Aboriginal Land Council of Tasmania with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>								
45	Aboriginal Launceston (TAS)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback provided to Aboriginal Launceston (TAS) on 29 September 2023 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Aboriginal Launceston (TAS) with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
46	AGL Energy (Gippsland Skies)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-24	Email	Esso introduction to wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				feedback provided in July 2024 based on their function, interest and activities.	period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
47	Aquila Fishing Charters	EMBA	Person or organisation with activities as local fishing charter business.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to Aquilla Fishing Charters on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2). - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Aquilla Fishing Charters with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	29-Sep-23	Email	<p>Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).</p>
										To	28-Mar-24	Email	<p>Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).</p>
48	Australian Conservation Foundation	EMBA	Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	<p>Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback provided to Australian Conservation Foundation on 29 September 2023 based on their function, interest and activities. - Email issued containing link to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 29 September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Australian Conservation Foundation with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
49	Australian Institute of Marine and Power Engineer	EMBA	Union representing the industrial and professional interests of Marine Engineers in Australia.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity description, location and potential impacts and seeking feedback provided to Australian Institute of Marine and Power Engineer on 8 October 2023 based on their function, interest and activities. Includes link to Information Bulletin #2 (Appendix F-2). - Email issued containing link to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in a national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 8 October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	Australian Institute of Marine and Power Engineer with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
50	Australian Marine Conservation Society (ACMS)	EMBA	National charity dedicated solely to protecting our precious ocean wildlife – a community of ocean lovers across the nation working for healthy seas.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to consultation information bulletin with activity description, location and potential impacts and seeking feedback provided to Australian Marine Conservation Society (ACMS) on 8 October 2023 based on their function, interest and activities. Includes link to Information Bulletin #2 (Appendix F-2). - Emails issued containing links to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in a national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 8 October 2023 and continued until this submission in August 2024. Esso has provided Australian Institute of Marine and Power Engineer with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
51	Australian Southern Bluefin Tuna Industry Association	EMBA	Organisation representing the Australian Southern Bluefin Tuna Industry working to maintain a high level of quality and training.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #1 (Appendix F-1) with activity description, location and	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				potential impacts and seeking feedback provided to Australian Southern Bluefin Tuna Industry Association on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Australian Southern Bluefin Tuna Industry Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								- Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
52	Australian Volunteer Coastguard	EMBA	Organisation responding to a variety of marine incident types and supporting other agencies in events such as marine fire and medical evacuation from vessels.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Australian Volunteer Coastguard based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Australian Volunteer	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Coastguard with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
53	Australian WildCatch Fishing	ATBA	Activities as business operating five fishing vessels in Gippsland and supports a variety of other Vessels, with the design and construction of Fishing Gear, Crew placement, Quota, licence management and associated administration.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Australian WildCatch Fishing based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback on 23 June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Australian WildCatch Fishing with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
54	Australian Wildlife Conservancy	EMBA	Interest as Australian independent, non-profit organisation, working to conserve threatened wildlife and ecosystems.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Australian Wildlife Conservancy based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up email seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Australian Wildlife Conservancy with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
55	Australian Workers' Union	EMBA	Activities as negotiating workplace enterprise agreements	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Australian Workers' Union based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback on 4 July 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	04-Jul-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Australian Workers' Union with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
56	Bass Strait Bait & Tackle Lakes Entrance	EMBA	<p>Organisation as Lakes Entrance based business servicing the recreational fishing industry.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Bass Strait Bait & Tackle Lakes Entrance based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Bass Strait Bait & Tackle Lakes Entrance with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
													Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
57	Beach Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Beach Energy based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Beach Energy with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
58	Bluefloat	ATBA	Organisation with a feasibility licence for an offshore wind	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Bluefloat had queries around activity timing.	There were no objections	Not applicable as no objections or claims were made.	No additional measures or controls are	To	14-May-24	Email	Consultation on Turrum Phase 3 Drilling. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
			farm project off the South Coast of Gippsland	Sufficient information has been provided as summarised below: -Esso sent Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback provided in May 2024 based on their function, interest and activities. - Esso sent additional email, including link to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Esso will continue consulting with Bluefloat and keep them updated on activity timing with meetings every 2-3 months during the JUR P&A campaign.	or claims on this activity.		required at this stage. Will continue to be reviewed throughout the JUR P&A campaign.	From	11-Jun-24	Email	Automatic reply: Esso Australia: Consultation on the Bream Greenhouse Gas Appraisal Environment Plan
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	10-Jul-24	Email	Esso introduction to potential wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
										From	11-Jul-24	Email	Stakeholder is asking for Esso to share the precise informations of the operations of the wells so that there will be no interference between their project and Esso's project.
										To	11-Jul-24	Email	Esso has logged their question and will keep them updated on timing of activities.
										To	15-Jul-24	Email	Esso Australia: Consultation on the Kipper - Subsea Drilling Environment Plan (and all other current activities)
										To	15-Jul-24	Email	Esso Australia: Consultation on the Turrum - Phase 3 Drilling Environment Plan (and all other current activities)
										From	30-Jul-24	Email	Response from BlueFloat - may have some operations taking place at same time. Whilst not in immediate area, please advise if there's an emergency that could impact their activities. Need to consider cumulative impacts of Esso's activities on their own activities. Please keep us informed of activities.
59	Boating Industry Association of Victoria	EMBA	Not-for-profit organisation and the peak body representing the recreational and light commercial marine industry.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Boating Industry Association of Victoria based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023..</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Boating Industry Association of Victoria with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>- Decommissioning</p> <p>- Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
60	Bodalla Local Aboriginal Land Council (NSW)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Bodalla Local Aboriginal Land Council (NSW) based on their function, interest and activities as summarised below:</p> <p>- Consultation emails with information on JUR EP oil spill modelling, EMBA and links to consultation information bulletin with activity description, location and potential impacts and seeking feedback.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	this submission in August 2024. Esso has provided Bodalla Local Aboriginal Land Council (NSW) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
61	Bunurong Land Council Aboriginal Corporation	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Bunurong Land Council Aboriginal Corporation based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent to Information Bulletin #1 (Appendix F-1) in June 2023 with activity description, location and potential impacts and seeking feedback. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September/October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Bunurong Land Council Aboriginal Corporation with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Bunurong Land Council Aboriginal Corporation responded acknowledging receipt of an email providing an update on Bass Strait offshore activities. Bunurong Land Council Aboriginal Corporation had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	Advised relevant person the 2022 Annual Decommissioning Report is available on website for review and invited to attend a community drop-in session between 5:30pm – 6:30pm on Tuesday 18th April at the Bellevue on Lakes (201 Esplanade Lakes Entrance, Victoria) re offshore activities including an update on decommissioning, South East Australian Carbon Capture and Storage (SEA CCS) project, Bass Strait State Waters Environment Plan (BSSWEP) and Jack Up Rig activities.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.									EMBA information and consultation closing dates.
										From	09-Oct-23	Email	Acknowledgement of Esso Australia - Updates on offshore activities in Bass Strait email. (including Turrum Phase 3 Drilling)
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automatic reply: Esso Australia: Further consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
62	Bush Heritage	EMBA	Interest as a non-profit organisation with headquarters in Melbourne, Australia, that operates throughout Australia.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Bush Heritage based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Bush Heritage with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
63	Cape Barren Island Aboriginal Association Incorporated (TAS)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Cape Barren Island Aboriginal Association Incorporated (TAS) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation emails with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback. - Esso sent additional email, including link to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Cape Barren Island Aboriginal Association Incorporated (TAS) with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
64	Catchers Trust (Chairman) (NSW)	EMBA	<p>Activities as Chairman of Catchers Trust in NSW, a sounding board for licensed fishermen and a mechanism to distribute profits from Sydney Fish Markets</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Catchers Trust (Chairman) (NSW) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email sent in September 2023 with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback. - Esso sent emails with links to 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided Catchers Trust (Chairman) (NSW) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
65	Circular Head Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Circular Head Aboriginal Corporation (TAS) based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided Circular Head Aboriginal Corporation (TAS) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
66	Committee for Gippsland	EMBA	Interests as independent group established to represent all sectors of business, industry and community views to collaboration on regional priorities to benefit Gippsland communities.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Committee for Gippsland based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Committee for Gippsland with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	<p>Committee for Gippsland sent an email asking if they could provide a link to the Esso Consultation Hub and Consultation Questionnaire in their upcoming member newsletter.</p> <p>Esso responded welcoming the inclusion of the links in their newsletter, and look forward to hearing from their members.</p> <p>Esso addressed all Committee for Gippsland queries.</p>	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	12-Jul-23	Email	EAPL response: You're very welcome to include links to our Consultation Hub and Questionnaire in your member newsletter, and we look forward to hearing from your members.
										From	12-Jul-23	Email	Relevant person requesting to include Consultation Hub link in newsletter.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
67	Commonwealth Fisheries Association	EMBA	<p>Organisation contributing to the formulation of effective and responsible fisheries policies.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Commonwealth Fisheries Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023</p>	Not applicable as no responses were received.	<p>There were no objections or claims on this activity.</p>	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>and continued until this submission in August 2024.</p> <p>Esso has provided Commonwealth Fisheries Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
68	Community Over Mining	EMBA	Interest as non-government organisation covering many topics in Gippsland and around Australia including pollution to air, land and water.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Community Over Mining based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Community Over Mining with the opportunity to provide feedback over a period greater than 30 days.</p>	<p>COM asked about the links in the Consultation Questionnaire.</p> <p>Esso answered explaining the links COM are referring to on the opening of Slido apply to ExxonMobil Users only. They ensure that we (Esso) adhere to policies such as Key IT User Responsibilities and Data Privacy whilst using Slido and to press continue to access the ExxonMobil Privacy Policy.</p> <p>COM had no queries or responses on the JUR P&A activity.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	12-Jul-23	Email	Interested to see whether my concerns are 'relevant.' The links on the questionnaire with the following did not open for me rather went to an error page.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	12-Jul-23	Email	The links you're referring to on the opening of Slido apply to ExxonMobil Users only. They ensure that we (Esso) are adhering to policies such as our Key IT User Responsibilities and Data Privacy whilst using Slido. If you press continue, you'll be able to access the ExxonMobil Privacy Policy.
										From	12-Jul-23	Email	Thanks
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
69	Construction, Forestry, Maritime, Mining and Energy Union	EMBA	Activities as trade union in building and construction, forestry and furnishing products, maritime and mining and energy production.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Construction, Forestry, Maritime, Mining and Energy Union based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in July 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Construction, Forestry, Maritime, Mining and Energy Union with the opportunity to provide feedback over a period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	04-Jul-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
70	Cooper Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Cooper Energy based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Cooper Energy with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
71	Corio Generation Limited	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-24	Email	Esso introduction to wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
72	Corner Inlet Fisheries Habitat Association	EMBA	Person or organisation to facilitate and encourage better habitat protection and stewardship of the local marine resource.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Corner Inlet Fisheries Habitat Association based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Corner Inlet Fisheries Habitat Association with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
73	Country Fire Authority (Region 10)	EMBA	Volunteer organisation fire service responsible for fire suppression, rescues, and response to other accidents and hazards across most of the state Victoria, Australia	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Country Fire Authority (Region 10) based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided Country Fire Authority (Region 10) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
74	East Gippsland Estuarine Fishermen's Association	EMBA	Person or organisation representing the interests of the Gippsland Lakes Estuarine fishers.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to East Gippsland Estuarine Fishermen's Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided East Gippsland Estuarine Fishermen's Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
75	Eastern Victorian Sea Urchin Divers Association	EMBA	Organisation representing Sea Urchin Divers.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to Eastern Victorian Sea Urchin Divers Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Eastern Victorian Sea Urchin Divers Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
76	Eastern Zone Abalone Industry Association	ATBA	Activities as the wild catch abalone industry sector that operates in the Mallacoota regions of Victoria.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Eastern Zone Abalone Industry Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Eastern Zone Abalone Industry Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
77	Elders Council of Tasmania Aboriginal Corporation	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Elders Council of Tasmania Aboriginal Corporation based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided Elders Council of Tasmania Aboriginal Corporation with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
78	Electrical Trades Union	EMBA	Activities as contractors - services include closure studies and decommissioning, deconstruction and demolition, civil engineering and construction, landscaping and external works, resource recovery and waste management, asbestos removal and disposal, site remediation, rehabilitation and revegetation, and heavy plant rental.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Electrical Trades Union based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in July 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Electrical Trades Union with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Electrical Trades Union completed the Consultation Survey. Electrical Trades Union had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	04-Jul-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										From	04-Jul-23	Questionnaire	Response to Slido RPQ - Interested in all activities. Positive feedback on Slido RPQ
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	19-Jul-23	Email	Thanks for taking the time to complete our Consultation Questionnaire, we'll continue updating you on all our offshore activities as requested. Please reach out if you have any queries.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
79	Emperor Energy	EMBA	Organisation with activities as oil and gas company with licenses offshore from Gippsland.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to Emperor Energy based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Emperor Energy with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
80	Environment Victoria	EMBA	Interest as an independent and not-for-profit group campaigning for a safe climate, healthy rivers and sustainable living.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Environment Victoria based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback in October 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023</p>	<p>Environment Victoria sent an email asking about the nature of the proposed offshore activities.</p> <p>Esso responded to Environment Victoria explaining the nature of the activities varies from permanently closing non-producing wells, new drilling campaigns, decommissioning non-producing platforms and carbon capture and</p>	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										From	13-Oct-23	Email	Question on proposed offshore activities in Bass Strait
										To	13-Oct-23	Email	Response to question on proposed activities
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <ul style="list-style-type: none"> - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>and continued until this submission in August 2024.</p> <p>Esso has provided Environment Victoria with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	<p>storage.</p> <p>Esso addressed all Environment Victoria queries.</p>				To	06-Jul-24	Email	<p>Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.</p>
81	Extinction Rebellion Australia	EMBA	<p>Interest as eNGO focused on persuading governments to act on climate and ecological matters.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Extinction Rebellion Australia based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Extinction Rebellion Australia with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	<p>Not applicable as no responses were received.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	24-Jul-23	Email	<p>Email sent to introduce the Esso Consultation Hub</p>
										To	28-Mar-24	Email	<p>Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).</p>
										To	06-Jul-24	Email	<p>Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.</p>
82	Far Out Charters	EMBA	<p>Organisation operating offshore fishing charters based out of Lakes Entrance.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p>	<p>Not applicable as no responses were received.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	13-Apr-23	Email	<p>EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to Far Out Charters based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Far Out Charters with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
83	First Tasmanians Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to First Tasmanians Aboriginal Corporation (TAS) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided First Tasmanians Aboriginal Corporation (TAS) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
84	Fishing Tribunal	ATBA	Activities as independent group established to consider commercial fishing vessel damage claims resulting from interaction with Esso equipment/facilities.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Fishing Tribunal based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024. Esso has provided Fishing Tribunal with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
85	Flinders Island Aboriginal Association Inc (TAS)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Flinders Island Aboriginal Association Inc (TAS) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Flinders Island Aboriginal Association Inc (TAS) with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
86	Friends of the Earth	EMBA	Interest as eNGO working to protect and/or educate about the natural environment.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Friends of the Earth based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	25-Jan-23	In Person	Meeting held with Friends of The Earth representative to provide an overview of EM activities including specific projects such as Gudgeon and Terakihi P&A, Decommissioning and JUR program. The discussion was informal and covered a wide range of subjects and questions. FOTE have been provided a direct contact for future engagement and did not raise any objections to the programs discussed.
										To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in January 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Friends of the Earth with the opportunity to provide feedback over a 9 month period.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
87	Game Fishing Association of Victoria	ATBA	Activities as the governing body for Game Fishing in Victoria.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Game Fishing Association of Victoria based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Game Fishing Association of Victoria with the opportunity to provide feedback over a period greater than 30 days.</p>	<p>Game Fishing Association of Victoria responded to a request to catch up on Esso's Bass Strait offshore activities and attend pipelines decommissioning forum.</p> <p>Esso responded with an email invitation to the pipelines decommissioning forum, and further follow ups to meet via SMS.</p> <p>Game Fishing Association of Victoria had no responses or queries regarding the JUR P&A activity.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Aug-23	Email	Request for catch up on activities shared on the Consultation Hub
										To	24-Aug-23	Email	Follow up on request for catch up and details on community drop in sessions
										From	25-Aug-23	Email	Confirmation on catch up and interest in pipeline decommissioning forums

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	28-Aug-23	Email	Coordinating catch up dates
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										From	09-Oct-23	Email	Relevant Person confirmed receipt of activity update.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
88	Gippsland Lakes Fishing Club	ATBA	Activities as a recreational fishing club based in Lakes Entrance.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Gippsland Lakes Fishing Club based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso presented at two Gippsland Lakes Fishing Club committee meetings providing information on the activity description, location and potential impacts. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 1 September 2022 and continued until this submission in August 2024. Esso has provided Gippsland Lakes Fishing Club with the opportunity to provide feedback over a 13 month period. Refer to columns headed	Esso presented at the Gippsland Lakes Fishing Club members committee meetings on 5 October 2022 and 7 June 2023 to discuss all Bass Strait offshore activities including JUR P&A activity description, location, timing and potential impacts and risks. Gippsland Lakes Fishing Club members had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	28-Apr-23	Email	Organisation of catering for event
										From	29-May-23	Email	Confirmation of presentation for offshore activities
										To	29-May-23	Email	EAPL sent email to RP. I'm touching base to confirm if you'd still like us to present at your committee meeting next week. If so, we'll provide an update on our offshore activities including: - Gudgeon and Terakihi Well Plug and Abandonment - Jack Up Rig - Geotechnical and geographical survey - Decommissioning - SEA Carbon Capture and Storage
										To	07-Jun-23	Email	Confirming time for presentation

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	07-Jun-23	In Person	GLFC Meeting Presentation 7th June.
										From	07-Jun-23	Email	Closing out consultation of presentation
										From	15-Jun-23	Email	Asking for reimbursement of catering
										To	15-Jun-23	Email	Confirming reimbursement for catering
										From	15-Jun-23	Email	Thanking for reimbursement and other updates
										To	21-Jun-23	Email	Follow up information provided post GLFC Meeting Presentation 7th June. Includes link to Information Bulletin #1 (Appendix F-1).
										To	22-Jun-23	Email	Confirmation of reimbursement for catering
										From	22-Jun-23	Email	Reply and thanks to confirmation of reimbursement for catering
										From	23-Jun-23	Email	RP responded Thankyou so much for the information. I will pass this on to the committee for conversation and I will get back to you soon.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
89	Gippsland Lakes Yacht Club	EMBA	Organisation sailing club in East Gippsland	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Gippsland Lakes Yacht Club based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Gippsland Lakes Yacht Club with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	<p>Committee for Gippsland sent an email asking if they could provide a link to the Esso Consultation Hub and Consultation Questionnaire in their upcoming member newsletter.</p> <p>Esso responded welcoming the inclusion of the links in their newsletter, and look forward to hearing from their members.</p> <p>Esso addressed all Committee for Gippsland queries.</p>	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
90	GreenPeace	EMBA	Interest as eNGO campaigning for a green and peaceful future.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to GreenPeace based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided GreenPeace with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										From	06-Jul-24	Email	Automated Reply: Esso Australia: Further consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan
91	Gulaga and Biamanga Joint Authority (NSW)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Gulaga and Biamanga Joint Authority (NSW) based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	commenced in September 2023 and continued until this submission in August 2024. Esso has provided Gulaga and Biamanga Joint Authority (NSW) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
92	GunaiKurnai Land and Waters Aboriginal Corporation	EMBA	Function, interests and activities as Registered Aboriginal Party that represents the GunaiKurnai people, the Traditional Owners of our Country, as determined by the Victorian Aboriginal Heritage Council under the Aboriginal Heritage Act 2006.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to GunaiKurnai Land and Waters Aboriginal Corporation based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Meeting at GLaWAC offices in May 2024 to discuss current	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided GunaiKurnai Land and Waters Aboriginal Corporation with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	In March 2022, Esso attended the GLaWAC offices in Kalimna to enquire about discussing indigenous matters with regards to Esso assets in Gippsland and provided contact details at reception. Esso followed up on this enquiry several times In June 2023 Esso shared details of the JUR P&A activity and sought to meet to discuss. Over the course of several months and various communications between GLaWAC and Esso no objections, concerns or issues were raised by GLaWAC in relation to the activity the subject of this EP. In May 2023 there was further correspondence to	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	EAPL provided link to 2022 Annual Decommissioning Report.
										From	20-Apr-23	Email	GLaWAC contacted Esso (in response to Decom Info Bulletin and card left) to arrange a meeting.
										To	26-Apr-23	Email	Esso to meet with GLaWAC
										To	08-May-23	Email	Esso follow-up on on meeting with GLaWAC arrangements
										To	25-May-23	Email	Follow up email for in person meeting with GLaWAC 24/06/2023/
										From	26-May-23	Email	Follow up email for in person meeting with GLaWAC 24/06/2023 - GLaWAC updates to meeting notes.
										From	26-May-23	Email	GLaWAC keen for discussion re information and resources that Esso may have that could support the Indigenous Protected Area Sea Country plan development and engagement sessions.
										To	05-Jun-23	Email	Follow up email from discussion re CCS; GLaWAC sought information on our Carbon Capture and Storage project. GLaWAC's confirmed interest as stakeholder for CCS.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii)	Reg 34(g) (ii)	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity					Esso's assessment of merits of objection or claim and its response	Environment Plan controls	To/From	Date	Correspondence method	Correspondence summary
				proposed and existing operational activities (Attachment F-4). - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. - Esso made multiple phone calls seeking feedback on the proposed activity. - Esso attended the GLaWAC offices in person seeking feedback on the proposed activity.	of this table for further details.	<p>arrange a meeting with GLaWAC and Esso to discuss Esso offshore activities and to have a further conversation about information and resources that Esso may have that could support the Indigenous Protected Area Sea Country plan development and engagement sessions.</p> <p>In June 2023 there was correspondence to arrange a conversation with NOPSEMA to discuss GunaiKurnai Country specifically as Esso Australia and other companies begin decommissioning activities.</p> <p>In July 2023 a representative from GLaWAC completed the Consultation Questionnaire asking to be consulted on decommissioning activities (the JUR P&A activity was not selected).</p> <p>In August 2023 there was correspondence inviting GLaWAC to attend an Oil Spill Response Exercise facilitated by Esso. GLaWAC were unable to attend.</p> <p>GLaWAC had no queries or responses on the JUR P&A activity.</p>			To	05-Jun-23	Email	Confirmation on GLaWAC update to meeting notes.	
										From	07-Jun-23	Email	Agreed response to pipeline query. No further action required on that concern.
										To	07-Jun-23	Email	GLaWAC confirmed as involved in our cultural heritage assessment which informs our EPBC Act and EE Act referrals.
										To	07-Jun-23	Email	Agreed to discuss mapping further, meeting time to be determined.
										To	07-Jun-23	Email	NOPSEMA have advised us that they have invited GLaWAC to attend their forum National Summit on Consultation on Offshore Petroleum Activities with First Nations Peoples to be held in Perth on 22 and 23 June. Esso intends to attend the forum and encourage you or an appropriate GLaWAC representative to reach out to Cameron Grebe at NOPSEMA (as copied) .
										From	07-Jun-23	Email	Discussion with NOPSEMA on GLaWAC interests in Baas Strait
										To	07-Jun-23	Email	Email from NOPSEMA to GLaWAC with Esso Cc'd as we had initiated the email.
										To	07-Jun-23	Email	Email from NOPSEMA to GLaWAC with Esso Cc'd as we had initiated the email.
										To	07-Jun-23	Email	Email from NOPSEMA to GLaWAC with Esso Cc'd as we had initiated the email.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
						Currently, there is no Sea Country mapping in the ATBA. Esso will continue consulting with GLaWAC as a Level 1 relevant person and will seek to discuss Sea Country for the development of future EPs.							brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	11-Jul-23	Email	My secondment with GLaWAC has concluded. Your email has been forwarded to the Eco Dev inbox and will be actioned by one of the team.
										From	12-Jul-23	Questionnaire	Response to Slido RPQ - Interested Decommissioning and SEA CCS.
										To	25-Jul-23	Email	Introduction of Esso Consultation Advisor and follow-up to previous discussions and submittal via the RPQ. Request to meet with GLaWAC to discuss multiple items.
										To	07-Aug-23	Phone	Phone call to invite GLaWAC to attend an Emergency Response exercise on 7th and 8th September 2023. Followed up with email invitation. Message left.
										To	07-Aug-23	Phone	Email (explanation email + 2 x Outlook meeting invites) to invite GLaWAC to attend an Emergency Response exercise on 7th and 8th September 2023.
										From	07-Aug-23	Email	GLaWAC email response to invitation to attend an Emergency Response exercise on 7th and 8th September 2023. GLaWAC will review information and respond.
										To	07-Aug-23	Email	Email follow-up on discussions between Relevant Person Consultation Lead and GLaWAC re potential for information sharing, specifically mapping.
										To	17-Aug-23	Email	Follow up email invitation to attend an Emergency Response exercise on 7th and 8th September 2023.
										From	17-Aug-23	Email	GLaWAC declined invitation to attend Esso Emergency Response exercise on 7th and 8th September 2023.
										To	17-Aug-23	Email	Acknowledged GLaWAC declined invitation to attend Esso Emergency Response exercise on 7th and 8th September 2023. Advised Esso is still available re mapping discussions. Provided details for Lakes Entrance and Sale Community Drop-in Sessions in August.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	09-Nov-23	Email	Email requesting meeting post the National Sea Country Alliance Summit (NSCAS) as a face-to-face introduction and to discuss where I feel Esso might partner or support your organizations aspirations and objectives in the Whole of Country Plan and the recent Renewables Energy Strategy (I understand this is to be updated soon). Some of the other items I've previously discussed briefly with your colleagues include: <ul style="list-style-type: none"> • Esso Sea Country Mapping Data • Potential for additional data collection (e.g. artifact dating), via recent Cultural Heritage surveys for the proposed SEA CCS Pipeline. • GLaWAC' S involvement in Esso Oil Spill Response Exercise
										To	16-Nov-23	Phone	Follow-up phone call to email (09/11/2023) requesting meeting post the National Sea Country Alliance Summit (NSCAS) as a face-to-face introduction and discussion. Left a message for General Manager Economic Development, Acting General Manager Corporate Services.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	23-May-24	Meeting - Online	Meeting at GLaWAC offices to discuss current proposed and existing operational activities. Refer to Appendix F-4 for consultation pack provided.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
93	H2O Tours & Adventures	EMBA	Organisation fishing charter operator.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>provided to H2O Tours & Adventures based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided H2O Tours & Adventures with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>								<ul style="list-style-type: none"> - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	29-Sep-23	Email	<p>Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).</p>
										To	28-Mar-24	Email	<p>Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).</p>
										To	06-Jul-24	Email	<p>Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.</p>
94	Hastings Coastal Advisory Group	EMBA	<p>Organisation advising Council in the use or development, planning, management, protecting and enhancing the Shire's coastlines</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Hastings Coastal Advisory Group based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Hastings</p>	<p>Not applicable as no responses were received.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	<p>Email sent to introduce the Esso Consultation Hub</p>
										To	29-Sep-23	Email	<p>Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).</p>

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Coastal Advisory Group with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
95	Hewardia	ATBA	Activities as Lakes Entrance based commercial fishing boat	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Hewardia based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Hewardia with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
96	High Sea Wind	EMBA	Organisation with a feasibility licence for an offshore wind	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Not applicable as no responses were received.	There were no objections	Not applicable as no objections or claims were made.	No additional measures or	To	11-Jul-24	Email	Esso introduction to wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3),

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
			farm project off the South Coast of Gippsland	Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.	Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.		or claims on this activity.		controls are required				definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
97	Iberdrola Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Stakeholder will forward any questions on the consultation email as it is now on their radar. Stakeholder wants to be consulted on Jack Up Rig – Well Plug and Abandonment Environment Plan, Kipper Subsea Drilling and Turrum Drilling, Stakeholder also has no objection contributions to note.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required at this stage. Will continue to be reviewed throughout the JUR P&A campaign.	To	10-Jul-24	Email	Esso introduction to potential wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
										From	11-Jul-24	Email	Stakeholder will forward any questions on the consultation email as it is now on their radar.
										To	15-Jul-24	Email	Esso Australia: Consultation on the Kipper - Subsea Drilling Environment Plan (and all other current activities)
										To	15-Jul-24	Email	Esso Australia: Consultation on the Turrum - Phase 3 Drilling Environment Plan (and all other current activities)
									From	22-Jul-24	Email	Stakeholder wants to be consulted on Jack Up Rig – Well Plug and Abandonment Environment Plan, Kipper Subsea Drilling and Turrum Drilling, Stakeholder also has no objection contributions to note.	
98	Independent chair of Fishing Tribunal	ATBA	Activities as Independent Chair of Esso's Fishing Tribunal	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Independent chair of Fishing Tribunal based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	Issued 2022 Annual Decommissioning Report and advised of community drop-in session between 5:30pm – 6:30pm on Tuesday 18th April at the Bellevue on Lakes.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023.</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Independent chair of Fishing Tribunal with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>- Decommissioning</p> <p>- Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	24-Aug-23	Email	Details on community drop in sessions, pipeline decommissioning forum. Request for catch up.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
99	King Island Shire Council	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to King Island Shire Council based on their function, interest and activities as summarised below:</p> <p>- Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	2024. Esso has provided King Island Shire Council with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
100	Lake Tyers Aboriginal Trust	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Lake Tyers Aboriginal Trust based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Lake Tyers Aboriginal Trust with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
101	Lake Tyers Beach Angling Club	EMBA	Organisation as recreational fishing club based in Lakes Tyers.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Lake Tyers Beach Angling Club based on their function, interest and activities as summarised below:	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Lake Tyers Beach Angling Club with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							- Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	24-Aug-23	Email	Request for catch up. Details on community drop in sessions and pipeline decommissioning forums
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
102	Lakes Charter Fishing	EMBA	Organisation as fishing charter operator.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Lakes Charter Fishing based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	commenced in June 2023 and continued until this submission in August 2024. Esso has provided Lakes Charter Fishing with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
103	Lakes Entrance Fishermen Limited	ATBA	Activities as Fishing co-operative representing the interests of Lakes Entrance based commercial fishing vessels. Represents Lakes Entrance commercial fishing by providing a full-service unloading facility to the local fishing fleet. From here, fresh seafood is distributed to local shops.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Lakes Entrance Fishermen Limited based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Lakes Entrance Fishermen Limited with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Esso held quarterly meetings with Lakes Entrance Fishermen Limited throughout the consultation period and provided detailed consultation on all offshore activities including JUR P&A including activity description, location, timing and potential impacts and risks. Lakes Entrance Fishermen Limited completed the consultation questionnaire (JUR P&A activity was not selected) and requested a meeting to discuss decommissioning end states. Esso attended the Lakes Entrance Fishermen Limited board meeting on 27 September 2023. Lakes Entrance Fishermen Limited had no queries or responses to the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	Issued 2022 Annual Decommissioning Report and advised of community drop-in session between 5:30pm – 6:30pm on Tuesday 18th April at the Bellevue on Lakes.
										To	19-Jun-23	Email	EAPL sent meeting invitation to relevant person
										From	19-Jun-23	Email	Meeting invitation forwarded to correct contact
										To	19-Jun-23	Email	EAPL acknowledged email.
										To	20-Jun-23	Email	EAPL sent meeting invitation to relevant person
										To	22-Jun-23	Email	EAPL sent meeting invitation to relevant person
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	26-Jun-23	Email	EAPL sent meeting invitation to relevant person
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	12-Jul-23	Questionnaire	Response to Slido RPQ. Interested in All Activities; Geotechnical and Geophysical Survey (G&G EP); Decommissioning.
										To	18-Jul-23	Email	I appreciate you taking the time to complete our Consultation Questionnaire and will keep you updated on all of our offshore activities. You requested a meeting with a representative of our management and legal team, and if it's possible to receive a map/plan now, of all the restricted and exposed areas proposed once the decommissioning is complete. I've sent you a meeting request to discuss these items further so I can better understand who the most appropriate person is to assist you, and then we can plan for a face-to-face meeting with your directors. If the date/time below isn't convenient, please propose a more suitable one.
										To	20-Jul-23	Meeting	EAPL met with relevant person on zoom and discussed the following offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Relevant person requested EAPL give a presentation at the next board meeting on Friday 18 August to discuss the activities above, in particular, decommissioning end states. EAPL will attend the meeting.
										To	04-Aug-23	Email	EAPL sent meeting invitation to schedule quarterly update meetings.
										To	27-Sep-23	In Person	LEFL Board meeting
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
104	Lakes Entrance Offshore Charters	EMBA	Organisation as fishing charter operator.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Lakes Entrance Offshore Charters based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Lakes Entrance Offshore Charters with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
105	Lakes Entrance Scallop Fishing Industry Association	ATBA	Activities as commercial scallop fishing industry group.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Lakes Entrance Scallop Fishing Industry Association based on their function, interest and activities as summarised below: - Invitation to attend community</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>consultation session in April 2023</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Lakes Entrance Scallop Fishing Industry Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<ul style="list-style-type: none"> - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
106	Lakes Explorer	EMBA	Organisation as tour operator.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Lakes Explorer based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2024. - Esso published advertisements in national, state and relevant 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Lakes Explorer with the opportunity to provide feedback over a period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
107	Life Saving Victoria	EMBA	Organisation working with communities, educational institutions, government agencies, businesses and the broader aquatic industry to prevent aquatic related death and injury in all Victorian communities.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Life Saving Victoria based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2024, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Life Saving Victoria with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
108	Marine and Safety Tasmania	EMBA	Organisation established to ensure the safe operation of vessels, provide and manage marine facilities and manage environmental issues relating to vessels.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Marine and Safety Tasmania based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2024, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Marine and Safety Tasmania with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
109	Maritime Industry Australia Limited	ATBA	Activities as organisation established to be the voice and advocate of the Australian maritime industry.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Maritime Industry Australia Limited based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response				
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary	
				<p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Maritime Industry Australia Limited with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>		
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub	
										From	12-Jul-23	Email	Thank you very much for the update on the consultation. We will deploy this update to members this week.	
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.	
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).	
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.	
110	Maritime Union of Australia	EMBA	Activities as union for waterside workers, seafarers, port workers, professional divers, and office workers associated with Australian ports	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Maritime Union of Australia based on their function, interest and activities as summarised below:</p> <p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023.</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Maritime Union of Australia with the</p>	Maritime Union of Australia completed the Consultation Survey and provided Esso with a resource for Esso's consultation purposes.	Maritime Union of Australia had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										From	28-Jun-23	Questionnaire	Response to Slido RPQ - Interested in all activities. Positive feedback on Slido RPQ	
										From	04-Jul-23	Email	<p>Thank you very much for your emails detailing Esso's current proposed activities in the Bass Strait.</p> <p>The Maritime Union of Australia appreciates this open line of communication and we look</p>	

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								forward to having our input addressed via the environment plan consultation process.
										To	04-Jul-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	19-Jul-23	Email	Thanks for taking the time to complete our Consultation Questionnaire, we'll continue updating you on all our offshore activities as requested. Please reach out if you have any queries.
										To	14-Aug-23	Email	Zoom Meeting invitation sent.
										From	02-Sep-23	Email	MUA provided communication guidance for Esso's consideration in consultation.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
111	Melythina tiakana warrana Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Not applicable as no responses were received.	There were no objections	Not applicable as no objections or claims were made.	No additional measures or	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to Melythina tiakana warrana Aboriginal Corporation (TAS) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Melythina tiakana warrana Aboriginal Corporation (TAS) with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>		or claims on this activity.		controls are required				person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
112	Member of Fishing Tribunal	ATBA	Activities as Member of Esso's Fishing Tribunal	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Member of Fishing Tribunal based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	Issued 2022 Annual Decommissioning Report and advised of community drop-in session between 5:30pm – 6:30pm on Tuesday 18th April at the Bellevue on Lakes.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <ul style="list-style-type: none"> - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>and continued until this submission in August 2024.</p> <p>Esso has provided Member of Fishing Tribunal with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	24-Aug-23	Email	Request for catch up. Details on community drop in sessions and pipeline decommissioning forums
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
113	Mitchelson Fisheries	ATBA	Activities as commercial fishing company based in Lakes Entrance who represent themselves.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Mitchelson Fisheries based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Mitchelson Fisheries with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	each response' to the right of this table for further details.					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
114	Navigator North Project Pty Ltd	ATBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Navigator North Project Pty Ltd initiated a meeting with Esso to discuss format of ongoing collaboration Initial introduction meeting held between Navigator North project (RES/Origin) and Esso. Esso will continue consulting with Navigator North Project Pty Ltd and keep them updated on activity timing with ongoing meetings during the JUR P&A campaign.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required at this stage. Will continue to be reviewed throughout the JUR P&A campaign.	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	10-Jul-24	Email	Esso introduction to potential wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
										From	12-Jul-24	Email	Stakeholder is reviewing the documents and will be in touch if they have any questions before they submit.
										From	12-Jul-24	Questionnaire	Stakeholder responded to questionnaire.
										From	12-Jul-24	Email	Thanks for reaching out. Can I suggest that now we are expecting formal issue of a feasibility licence, it is worthwhile initiating a meeting with Esso to discuss format of ongoing collaboration. Not sure who is best placed to represent Esso. Please suggest a date/time and I can set something up.
										To	15-Jul-24	Email	Response to email of 12/7/2024 at 6.31 pm. Let's have an initial meeting; some dates and times are suggested.
										To	15-Jul-24	Email	Esso Australia: Consultation on the Kipper - Subsea Drilling Environment Plan (and all other current activities)
										To	15-Jul-24	Email	Esso Australia: Consultation on the Turrum - Phase 3 Drilling Environment Plan (and all other current activities)
										To	18-Jul-24	Meeting - Online	Initial introduction meeting between Navigator North project (RES/Origin) and Esso
										To	23-Jul-24	Email	We will keep you updated of the activities you've requested.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
115	New South Wales Aboriginal Land Council	EMBA	Organisation as NSW State peak representative body in Aboriginal affairs.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to New South Wales Aboriginal Land Council based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback in September 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided New South Wales Aboriginal Land Council with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
116	NSW Local Aboriginal Land Council: Awabakal	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Awabakal based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Awabakal with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
117	NSW Local Aboriginal Land Council: Bahtabah	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Bahtabah based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Bahtabah with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
118	NSW Local Aboriginal Land Council: Batemans Bay	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Not applicable as no responses were received.	There were no objections	Not applicable as no objections or claims were made.	No additional measures or	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Batemans Bay based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Batemans Bay with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>		or claims on this activity.		controls are required				person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
119	NSW Local Aboriginal Land Council: Bega	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Bega based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	2024. Esso has provided NSW Local Aboriginal Land Council: Bega with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
120	NSW Local Aboriginal Land Council: Birpai	EMBA	Function as Indigenous Land Council	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
121	NSW Local Aboriginal Land Council: Bodalla	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Bodalla based on their function, interest and activities as summarised below: - Consultation email with	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Bodalla with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
122	NSW Local Aboriginal Land Council: Bunyah	EMBA	Function as Indigenous Land Council	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Esso has provided the opportunity for feedback over a period of 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
123	NSW Local Aboriginal Land Council: Cobowra	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Not applicable as no responses were received.	There were no objections	Not applicable as no objections or claims were made.	No additional measures or	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Cobowra based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Cobowra with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>		or claims on this activity.		controls are required				person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
124	NSW Local Aboriginal Land Council: Darkinjung	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Darkinjung based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	2024. Esso has provided NSW Local Aboriginal Land Council: Darkinjung with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
125	NSW Local Aboriginal Land Council: Eden	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Eden based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Eden with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
126	NSW Local Aboriginal Land Council: Forster	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Forster based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Forster with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
127	NSW Local Aboriginal Land Council: Illawarra	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Illawarra based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Illawarra with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
128	NSW Local Aboriginal Land Council: Jerrinja	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Jerrinja based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Jerrinja with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback.	of this table for further details.								
129	NSW Local Aboriginal Land Council: Karuah	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Karuah based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Karuah with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
130	NSW Local Aboriginal Land Council: Kempsey	EMBA	Function as Indigenous Land Council	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p>	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
131	NSW Local Aboriginal Land Council: La Perouse	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: La Perouse based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: La Perouse with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
132	NSW Local Aboriginal Land Council: Merrimans	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Merrimans based on their	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2		

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Merrimans with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							(Appendix F-2) and webpages, including EMBA information and consultation closing dates.	
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
133	NSW Local Aboriginal Land Council: Metropolitan	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Metropolitan based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Metropolitan with	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
134	NSW Local Aboriginal Land Council: Mogo	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Mogo based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Mogo with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
135	NSW Local Aboriginal Land Council: Nowra	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Nowra based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Nowra with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
136	NSW Local Aboriginal Land Council: Purfleet Taree	EMBA	Function as Indigenous Land Council	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Esso has provided the opportunity for feedback over a period of 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
137	NSW Local Aboriginal Land Council: Ulladulla	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Ulladulla based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Aboriginal Land Council: Ulladulla with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
138	NSW Local Aboriginal Land Council: Wagonga	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Aboriginal Land Council: Wagonga based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response				
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary	
				and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Wagonga with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.	
139	NSW Local Aboriginal Land Council: Worimi	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Aboriginal Land Council: Worimi based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).	
					- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.					Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Aboriginal Land Council: Worimi with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
											To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
											To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback.	of this table for further details.								
140	NSW Local Government Area / Council: Bayside	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Bayside based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Bayside with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
141	NSW Local Government Area / Council: Bega Valley	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Bega Valley based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Bega Valley with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
142	NSW Local Government Area / Council: Central Coast	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Central Coast based on their function, interest and activities as summarised below:</p> <p>- Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Central Coast with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
143	NSW Local Government Area / Council: Eurobodalla	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Eurobodalla based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Eurobodalla with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
144	NSW Local Government Area / Council: Georges River	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Georges River based on their function, interest and activities as	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including		

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Georges River with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>								EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
145	NSW Local Government Area / Council: Kempsey	EMBA	Function as department or agency of NSW local council	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Esso has provided the opportunity for feedback over a period of 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
146	NSW Local Government Area / Council: Kiama	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Kiama based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Kiama with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
147	NSW Local Government Area / Council: Lake Macquarie	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Lake Macquarie based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Lake Macquarie with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
148	NSW Local Government Area / Council: Mid-Coast	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Mid-Coast based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Mid-Coast with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback.	of this table for further details.								
149	NSW Local Government Area / Council: Mosman	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Mosman based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Mosman with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
150	NSW Local Government Area / Council: Newcastle	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Newcastle based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Newcastle with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
151	NSW Local Government Area / Council: North Sydney	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: North Sydney based on their function, interest and activities as summarised below:</p> <p>- Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: North Sydney with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
152	NSW Local Government Area / Council: Northern Beaches	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Northern Beaches based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Northern Beaches with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
153	NSW Local Government Area / Council: Port Macquarie - Hastings	EMBA	Function as local government / council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons	Not applicable as no responses were received.	No objections, claims or issues raised	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
154	NSW Local Government Area / Council: Port Stephens	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Port Stephens based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	09-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
155	NSW Local Government Area / Council: Randwick	EMBA	Function as local government / council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Port Stephens with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	No objections,	Not applicable as no objections or claims were made.	No additional measures or	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Esso has provided the opportunity for feedback over a period of 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>		claims or issues raised		controls are required				
156	NSW Local Government Area / Council: Shellharbour	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Shellharbour based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Shellharbour with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	of this table for further details.								
157	NSW Local Government Area / Council: Shoalhaven	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Shoalhaven based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Shoalhaven with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
158	NSW Local Government Area / Council: Sutherland Shire	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Sutherland Shire based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Sutherland Shire with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
159	NSW Local Government Area / Council: Sydney	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to NSW Local Government Area / Council: Sydney based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided NSW Local Government Area / Council: Sydney with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-2) advising of the proposed activities and requesting feedback.	of this table for further details.								
160	NSW Local Government Area / Council: Waverley	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Waverley based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Waverley with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
161	NSW Local Government Area / Council: Wollongong	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Wollongong based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Wollongong with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
162	NSW Local Government Area / Council: Woollahra	EMBA	Function as department or agency of NSW local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to NSW Local Government Area / Council: Woollahra based on their function, interest and activities as summarised below:</p> <p>- Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided NSW Local Government Area / Council: Woollahra with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
163	NTSCORP Limited (NSW)	EMBA	Function as department or agency of NSW local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				Sufficient information has been provided to NTSCORP Limited (NSW) based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
164	Oil Spill Response Limited	EMBA	Function as an organisation industry-funded cooperative which exists to respond to oil spills.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
				Sufficient information has been provided to Oil Spill Response Limited based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period					To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023.</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Oil Spill Response Limited with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							<p>- Decommissioning</p> <p>- Bass Strait State Waters EP</p> <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
165	Orsted Australia	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <p>- Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Esso has provided the opportunity for feedback over a period of 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	<p>Orsted Australia requested to be kept up to date on Esso's activities in the region, particularly with decommissioning activities around Bream.</p> <p>Bream / SEA CCS and decommissioning information bulletin provided.</p> <p>Esso will continue consulting with Orsted Australia and keep them updated on activity timing during the JUR P&A campaign</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required at this stage.</p> <p>Will continue to be reviewed throughout the JUR P&A campaign.</p>	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	11-Jul-24	Email	Esso introduction to wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.
										To	16-Jul-24	Email	Thank you for the response. Please see information below regarding Esso's decommissioning activities that include Bream platforms. I will also send you information on our Carbon Capture and Storage (CCS) project relevant to Bream platform in a separate email. Please reach out to me through the Consultation Team if you have any questions, we are happy to facilitate a meeting to discuss our activities further.
										From	16-Jul-24	Email	Thank you for reaching out and for your kind words on our project, we are super pleased and happy to continue our work in Gippsland. Thank you as well for identifying our project, we would indeed like to be kept up to date on

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
													Esso's activities in the region, particularly with decommissioning activities around Bream – do you have specific materials that could be shared?
166	Panama II Octopus fishing vessel	ATBA	Activities as Lakes Entrance based commercial fishing boat	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Panama II Octopus fishing vessel based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Panama II Octopus fishing vessel with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
167	Parkwind	EMBA	<p>Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons</p>	<p>Parkwind requested to be informed about the following:</p> <ol style="list-style-type: none"> 1. Works and vessel movements, in particular at the Dolphin and Perch platforms, which will occur from Q4 2024 to Q2 2025. We would like to be 	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required at this stage. Will continue to be reviewed throughout the JUR P&A campaign.	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.	
									To	11-Jul-24	Meeting - Online	Initial introduction meeting between Blue Mackerel North project team - Parkwind and JeraNex and Esso	
									To	12-Jul-24	Email	Esso introduction to potential wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-	

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response				
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary	
				based on their function, interest and activities. - Several meetings have been held to discuss JUR P&A timings and monthly meetings will take place beginning in October 2024 for the duration of the JUR P&A campaign.	to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	listed as a "relevant person" in relation to works at these sites. 2. Noise profiles of the vessels doing the work and any other noise profiles associated with P&A work? 3. Can you share sightings of marine mammals, specifically around the Dolphin and Perch platforms, as this may help inform our surveys. 4. Petroleum production license (VIC/L 17) overlaps our Blue Mackerel feasibility license site. Does this license belong to ESSO? If so, any plans for any surveys, works or exploitation under the license? 5. Meeting on 12 July 2024, ESSO mentioned opportunity to share existing infrastructure or easements with the Blue Mackerel project. We are interested to understand this opportunity further. Esso will continue consulting with Parkwind and keep them updated on activity timing with monthly meetings during the JUR P&A campaign.							3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation email copied, or if none respond to the same confirming you have no concerns.	
										From	18-Jul-24			Please keep us informed about the following: 1. Works and vessel movements, in particular at the Dolphin and Perch platforms, which will occur from Q4 2024 to Q2 2025. We would like to be listed as a "relevant person" in relation to works at these sites. 2. Noise profiles of the vessels doing the work and any other noise profiles associated with P&A work? 3. Can you share sightings of marine mammals, specifically around the Dolphin and Perch platforms, as this may help inform our surveys. 4. Petroleum production license (VIC/L 17) overlaps our Blue Mackerel feasibility license site. Does this license belong to ESSO? If so, any plans for any surveys, works or exploitation under the license? 5. Meeting on 12 July 2024, ESSO mentioned opportunity to share existing infrastructure or easements with the Blue Mackerel project. We are interested to understand this opportunity further.
										To	24-Jul-24	Email		Response to questions raised by Jeranex in incoming email of 18/7/2024 at 6.59 pm.
										From	31-Jul-24	Email		Parkwind meeting date availability to discuss Jack-Up Rig – Well Plug and Abandonment Environment Plan
										From	02-Aug-24	Email		Revised meeting dates sent
										To	05-Aug-24	Email		Esso proposed meeting time to discuss Parkwind questions on JUR
										From	05-Aug-24	Email		Parkwind suggested timing for meeting to discuss questions on JUR
168	Parrdarrama Pungenna Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Parrdarrama Pungenna Aboriginal Corporation (TAS) based on their function, interest and activities as	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email		Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email		Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided Parrdarrama Pungenna Aboriginal Corporation (TAS) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
169	Pearl Lugger Cruises	EMBA	Organisation as tour company.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Pearl Lugger Cruises based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Pearl Lugger Cruises with the opportunity to provide feedback over a period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
170	Peels Lake Cruises	EMBA	Organisation as tour company.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Peels Lake Cruises based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Peels Lake Cruises with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
171	Piscari Industries Pty Ltd	ATBA	Activities as commercial fishing company based in Lakes Entrance.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Piscari Industries Pty Ltd fishing vessel based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				#1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Piscari Industries Pty Ltd with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								- Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
172	Port Franklin Fishermen's Association	EMBA	Organisation for local fishing association.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Port Franklin Fishermen's Association based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Port	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Franklin Fishermen's Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
173	Port Phillip Sea Pilots	EMBA	Organisation of marine pilotage for commercial vessels calling to Melbourne, Geelong, Hastings, Corner Inlet, and back-up pilotage to Portland	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Port Phillip Sea Pilots based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Port Phillip Sea Pilots with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
174	Qube (operator - Barrie's Beach)	EMBA	Organisation with activities as Barry Beach Port Operator.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Qube based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Qube with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
175	Relevant Person #192	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Relevant Person #192 based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #192 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
176	Relevant Person #298	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Relevant Person #298 based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #298 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
177	Relevant Person #329	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Relevant Person #329 based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #329 with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
178	Relevant Person #356	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	2023 and continued until this submission in August 2024. Esso has provided Relevant Person #356 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
179	Relevant Person #389	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Relevant Person #389 based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #389 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
180	Relevant Person #507	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under	Relevant Person #507 completed the Consultation	There were no objections	Not applicable as no objections or claims were made.	No additional measures or	From	01-Aug-23	Questionnaire	Response to Slido - Interested in All Activities;

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided based on function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up email seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in August 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #507 with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	<p>Survey.</p> <p>Relevant Person #507 had no queries or responses on the JUR P&A activity.</p>	<p>or claims on this activity.</p>		controls are required	To	02-Aug-23	Email	Esso appreciates you taking the time to complete our Consultation Questionnaire and will keep you updated on all of our offshore activities as requested.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
181	Relevant Person #508	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in August 2023 and continued until this submission in August 2024.</p>	<p>Relevant Person #508 completed the Consultation Survey.</p> <p>Relevant Person #508 had no queries or responses on the JUR P&A activity.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	No additional measures or controls are required	From	01-Aug-23	Questionnaire	Response to Slido - Interested in All Activities;
										To	02-Aug-23	Email	Esso appreciates you taking the time to complete our Consultation Questionnaire and will keep you updated on all of our offshore activities as requested.
										To	28-Aug-23	Email	Response to completing Consultation Questionnaire
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Esso sent follow up email seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso has provided Relevant Person #508 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
182	Relevant Person #509	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up email seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in August 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #509 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Relevant Person #509 completed the Consultation Survey. Relevant Person #509 had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	From	06-Aug-23	Questionnaire	Dale responded to the RPQ and advised he would like to be consulted directly.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
183	Relevant Person #510	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function,	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #510 with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
184	Relevant Person #534	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #534 with the opportunity to provide feedback over a period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
185	Relevant Person #541	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #541 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
186	Relevant Person #559	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response					
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary		
				<p>Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #559 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
187	Relevant Person #560	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below:</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #560 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
												To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
														To	06-Jul-24

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
188	Relevant Person #561	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #561 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
189	Relevant Person #562	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response					
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary		
				plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #562 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					From	06-Jul-24	Email	Stakeholder is interested for futher consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan.		
										From	10-Jul-24	Email	Stakeholder is still interested in further consultation on the Jack-Up Rig – Well Plug and Abandonment activity.		
190	Relevant Person #564	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #564 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
												To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
													To	06-Jul-24	Email

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
191	Relevant Person #565	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #565 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
192	Relevant Person #566	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	this submission in August 2024. Esso has provided Relevant Person #566 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
193	Relevant Person #567	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #567 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
194	Relevant Person #568	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function,</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #568 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
195	Relevant Person #569	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #569 with the opportunity to provide feedback over a period	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
196	Relevant Person #570	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #570 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
197	Relevant Person #571	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response					
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary		
				<p>Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #571 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
198	Relevant Person #572	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below:</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #562 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
												To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
														To	06-Jul-24

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					of this table for further details.								
199	Relevant Person #573	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Relevant Person #573 with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
200	Relevant Person #574	EMBA	Interests as community member.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Information Bulletin #2 (Appendix F-2) in October 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #574 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
201	Relevant Person #575	EMBA	Interests as community member.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided based on function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Relevant Person #575 with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
				To	06-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		
202	RWE Renewables	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below:	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the	RWE Renewables requested following information: 1. Coordinates and details (dimensions, materials) of the	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required at this stage. Will continue to	To	11-Jul-24	Email	Esso introduction to wind licence owner (identified as a relevant person). Provided Information Bulletin #3 (Appendix F-3), definition of relevant person, and link to Consultation Hub. Request to review and forward any questions to the consultation

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				- Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.	nature and scale of the activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	P&A subsea structures. 2. More comprehensive program outline of duration of the works. 3. Are there any associated subsea flow lines that will be left in place or recovered, as this was not clear from the report. Response provided and queries closed out. Esso will continue consulting with RWE Renewables throughout the JUR P&A campaign.			be reviewed throughout the JUR P&A campaign.				email copied, or if none respond to the same confirming you have no concerns.
										From	26-Jul-24	Email	Request following information: 1. Coordinates and details (dimensions, materials) of the P&A subsea structures. 2. More comprehensive program outline of duration of the works. 3. Are there any associated subsea flow lines that will be left in place or recovered, as this was not clear from the report.
										To	29-Jul-24	Email	Response provided to queries raised in previous email of 26/7/2024, 10.26 am
										From	30-Jul-24	Email	Thanks for email and information. We'll come back if we have any further questions.
203	Sail Safari	EMBA	Organisation as sailing charter business.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Sail Safari based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2024, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Sail Safari with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
204	Sale Game & Fishing Association	ATBA	Activities as game fishing association.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Sale Game & Fishing Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Sale Game & Fishing Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
205	Save Westernport	EMBA	Interest as community organisation to protect Western Port Bay's wetlands, and support sustainable marine and tourism industries.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Save Westernport based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Save Westernport with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
206	Scallop Fishermen's Association	ATBA	Activities as a collective of the Scallop Fishing Families and associated support work force based in Lakes Entrance.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Scallop Fishermen's Association based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Scallop Fishermen's Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.						To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
207	Sea Myth Fishing Charters	EMBA	Organisation as fishing charter business.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Sea Myth Fishing Charters based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023 and March 2023. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Sea Myth Fishing Charters with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
				To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).						
				To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).						
208	Sea Shepherd Australia	EMBA	Interest as an international, non-profit marine conservation organization that campaigns to defend, conserve and protect the world's ocean.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Sea Shepherd Australia based on their function, interest and activities as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
				To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).						
				To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.						

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	provided as consultation commenced in October 2023 and continued until this submission in August 2024. Esso has provided Sea Shepherd Australia with the opportunity to provide feedback over a period greater than 30 days Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
209	Seafood Industry Victoria	ATBA	Activities as a not-for-profit, non-government organisation. SIV is the representative peak body for the Victorian seafood industry, from professional fishers through to wholesale, processors and retail.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Seafood Industry Victoria based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided Seafood Industry Victoria with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Two meetings were held with Seafood Industry Victoria in June 2023 and October 2023 and JUR P&A activity discussed including location, activity, timing and Seafood Industry Victoria said there would be little to no impact on commercial fishing activity, particularly in State Waters. Seafood Industry Victoria had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	26-Jun-23	Phone	EAPL meet with relevant person on zoom and discussed all offshore activities,
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	04-Aug-23	Email	Relevant person sent email with updated contact details.
										To	04-Aug-23	Email	EAPL sent meeting invitation to schedule quarterly update meetings.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	18-Oct-23	In Person	SIV quarterly consultation meeting
										To	23-Oct-23	Email	<p>Follow-up to SIV quarterly consultation meeting 18/10/2023. SIV</p> <ul style="list-style-type: none"> Working on amending SIV Offshore Energy policy – purpose is to act as an overarching document. Will be uploaded to SIV website and updated as required. Looking for feedback from Industry on policy to develop standard procedure. Members main issues – <ul style="list-style-type: none"> Short term displacement of fish stock and fishing grounds if full removal done Long term displacement, loss of fishing grounds (compensation) if SPJs remain in-situ <p>Esso</p> <ul style="list-style-type: none"> Esso and SIV discussed the option of a formal service agreement / fee for service, which would establish consultation expectations including frequency of consultation (remain quarterly), method of consultation (in-person meetings), how relevant information might be disseminated to SIV members. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. Esso are reviewing the Scottish fishing trust in relation to decommissioning end state options. Trust will be based on providing safety programs, education, training, installing plotters on vessels to impacted fishing industry, etc. Trust does not compensate for loss of fishing grounds. Esso advised Matt that SIV would need to explain how compensation on loss of fishing grounds would work. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. Esso advised that other Victorian energy operators are not interested in being part of the Trust as they are looking at full removal with fishing grounds returned. The current Esso Fishing tribunal will remain in place until petroleum licences are relinquished. Esso is available to work directly with SIV members in whichever format they prefer (eg presentations, digital material, etc). Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. Esso offered to provide a Pipeline decommissioning workshop in 1H24 to SIV members and encouraged SIV to offer this workshop to its members as pipelines are in state waters and the workshop will provide SIV members an opportunity to understand

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
													<p>decommissioning options and provide their feedback and input. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso.</p> <ul style="list-style-type: none"> • Esso offered a flight offshore to view Esso facilities. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. • Esso explained that under NOPSEMA regulations, titleholders are required to validate that all SIV members have been asked if they wish to be consulted directly or through SIV. Esso asked SIV to share their members contact details so that Esso can contact them directly to validate consultation preferences, to which Matt said they could not. Esso requested that SIV contact their members and verify that they do not want to be consulted with directly by Esso. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. • Esso requested a map of where SIV members fish which would be useful in determining if a SIV member was a relevant person for each Esso activity. Esso would then share this map with SIV. SIV agreed this would be useful for all parties involved and would look at providing that information. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. • Esso showed SIV the Esso Consultation Hub and provided an update of each of the following activities (No follow up or action required by Esso): <ul style="list-style-type: none"> o SEA CCS o Decommissioning SPJs o Gudgeon and Terakihi (no actions or concerns raised. Consultation closed) o Decommissioning pipelines o JUR Well P&A (no actions or concerns raised. Consultation closed) o Kipper Drilling o Turrum Drilling <p>SIV</p> <ul style="list-style-type: none"> • SIV members report catch numbers and fishing areas on a daily basis through VFA - Vic reporting grid (VFA). SIV agreed it would be useful for members to know where Esso's proposed activities are using a map of their fishing area overlaid with Esso facilities and activity areas. • SIV is a State managed Fisheries - majority of members only fish in State waters, they have access to Commonwealth Waters but minimal fishing undertaken there by SIV members. • SIV said they would not guarantee that Esso consultation material / information is received or noted by all members.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
													<ul style="list-style-type: none"> SIV said they would be interested in the Pipeline workshop and offshore trip. Matt will discuss with SIV board and advise Esso. No follow up or action required by Esso. <p>Actions</p> <ul style="list-style-type: none"> Esso - send information on NOPSEMA brochure, decommissioning information to SIV. Information sent. Action complete. Esso - keep quarterly meetings in calendar. No follow up or action required by Esso. SIV - Consultation validation from members - will take to board to discuss (noting Esso will continue to engage with SIV as a method of communication to their members until advised otherwise). No follow up or action required by Esso. SIV - to develop engagement model (preferred method of communication, how information is presented and frequency). No follow up or action required by Esso. SIV - send Esso map of fishing areas. No follow up or action required by Esso.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	11-Jul-24	Email	Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan. Includes link to Information Bulletin #3 (Appendix F-3).
210	Seaspray Surf Lifesaving Club	EMBA	Organisation as Surf Lifesaving Club	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Seaspray Surf Lifesaving Club based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Seaspray Surf Lifesaving Club with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
211	SETFIA Chairman	ATBA	Activities as Chairman of Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to SETFIA Chairman based on their function, interest and activities as summarised below: - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024. Esso has provided SETFIA Chairman with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.										
212	Seven Group Holdings	EMBA	Organisation as shareholder in Beach Energy and has interests in energy assets in Australia.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Seven Group Holdings completed the Consultation Survey.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to Seven Group Holdings based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Seven Group Holdings with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	<p>Seven Group Holdings had no queries or responses on the JUR P&A activity.</p>				To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										From	19-Jul-23	Questionnaire	Response to Slido RPQ - Interested in all activities.
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
213	Six Rivers Aboriginal Corporation (TAS)	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Six Rivers Aboriginal Corporation (TAS) based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	<p>Not applicable as no responses were received.</p>	<p>There were no objections or claims on this activity.</p>	<p>Not applicable as no objections or claims were made.</p>	<p>No additional measures or controls are required</p>	To	29-Sep-23	Email	<p>Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).</p>
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided Six Rivers Aboriginal Corporation (TAS) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
214	South East Trawl Fishing Industry Association	ATBA	Activities as incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to South East Trawl Fishing Industry Association based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided South East Trawl Fishing Industry Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed	Esso held quarterly meetings with SETFIA throughout the consultation period and provided detailed consultation on all offshore activities including JUR P&A including activity description, location, timing and potential impacts and risks. SETFIA had no queries or responses to the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	12-Apr-23	Email	Provided RP with 2022 annual decommissioning report and advised of community drop-in session in Lakes Entrance on 18 April 2023.
										To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	19-Jun-23	Email	EAPL sent meeting invitation
										To	20-Jun-23	Phone	EAPL called RP and discussed several topics including Esso's proposed activities, how best consult to with members, fishing trust, marine parks, etc
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	23-Jun-23	Email	EAPL sent email to RP to confirm if any members wish to be consulted on Esso's activities directly, or if their preference is to be consulted through SETFIA as their representative? RP provided with links to NOPSEMA's Consultation on offshore petroleum environment plans brochure for further information on consultation with representative bodies and an Esso Consultation Questionnaire to better understand how individuals and groups wish to be consulted.
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	11-Sep-23	Email	Confirmation on meeting time and date. Details on pipeline decommissioning forums.
										To	14-Sep-23	In Person	SETFIA Quarterly meeting
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
215	Southerly Ten (Star of the South and Kut-Wut projects)	EMBA	Organisation with a feasibility licence for an offshore wind farm project off the South Coast of Gippsland	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Information Bulletin #3	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the	Meeting held to discuss Esso current activities. Esso will continue consulting with Southerly Ten and keep them updated	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required at this stage. Will continue to be reviewed	To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	15-Jul-24	Email	Esso Australia: Consultation on the Kipper - Subsea Drilling Environment Plan (and all other current activities).

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-3) with activity description, location and potential impacts and seeking feedback provided in July 2024 based on their function, interest and activities.	activity as described in this EP, the minimum 30 days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Esso has provided the opportunity for feedback over a period of 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	on activity timing with meetings every quarter during the JUR P&A campaign.			throughout the JUR P&A campaign.	To	15-Jul-24	Email	Esso Australia: Consultation on the Turrum - Phase 3 Drilling Environment Plan (and all other current activities)
										To	28-Jul-24	Meeting - In Person	Meeting to discuss Esso current activities
216	Southern Shark Industry Alliance	ATBA	Activities as incorporated association with members from the Southern and Eastern Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Southern Shark Industry Alliance based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Southern Shark Industry Alliance with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

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		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.						To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
217	Star of the South	EMBA	Organisation as commercial venture proposing an offshore wind farm project of the South Coast of Gippsland.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Star of the South based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Star of the South with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	07-Mar-24	Meeting - In Person	Meeting to discuss all current and proposed offshore activities.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	14-May-24	Email	Esso Australia: Consultation on Turrum Phase 3 Drilling
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
218	Surfrider Foundation Australia	EMBA	Interest as not for profit sea-roots organisation dedicated to the protection of Australia's waves and beaches through conservation, activism, research and education.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Surfrider Foundation Australia based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in October 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Surfrider Foundation Australia with the opportunity to provide feedback over a period greater than 30 days</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
219	TAS Local Government Area / Council: Break O'Day	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: Break O'Day based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided TAS Local Government Area / Council: Break O'Day with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
220	TAS Local Government Area / Council: Burnie	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: Burnie based on their function, interest and activities as summarised below:</p> <p>- Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided TAS Local Government Area / Council: Burnie with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
221	TAS Local Government Area / Council: Central Coast	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				Sufficient information has been provided to TAS Local Government Area / Council: Central Coast based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										From	09-Jul-24	Email	Automated Reply: Esso Australia: Further consultation on the Jack-Up Rig – Well Plug and Abandonment Environment Plan
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
222	TAS Local Government Area / Council: Circular Head	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				Sufficient information has been provided to TAS Local Government Area / Council: Circular Head based on their function, interest and activities as	Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Circular Head with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
223	TAS Local Government Area / Council: Devonport	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to TAS Local Government Area / Council: Devonport based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Devonport with the opportunity to provide	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
224	TAS Local Government Area / Council: Dorset	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: Dorset based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided TAS Local Government Area / Council: Dorset with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
225	TAS Local Government Area / Council: Flinders	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: Flinders based on their function,</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Flinders with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							(Appendix F-2) and webpages, including EMBA information and consultation closing dates.	
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
226	TAS Local Government Area / Council: George Town	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to TAS Local Government Area / Council: George Town based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: George Town with	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
227	TAS Local Government Area / Council: Glamorgan-Spring Bay	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to TAS Local Government Area / Council: Glamorgan-Spring Bay based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Glamorgan-Spring Bay with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
228	TAS Local Government Area / Council: Latrobe	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2).	Esso considers it has discharged its obligations for consultation under Regulation 25(3).	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Sufficient information has been provided to TAS Local Government Area / Council: Latrobe based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided TAS Local Government Area / Council: Latrobe with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
229	TAS Local Government Area / Council: Launceston	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: Launceston based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Launceston with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	09-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
230	TAS Local Government Area / Council: Waratah-Wynyard	EMBA	Function as department or agency of Tasmania local council.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to TAS Local Government Area / Council: Waratah-Wynyard based on their function, interest and activities as summarised below: - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided TAS Local Government Area / Council: Waratah-Wynyard with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
				To	08-Oct-23					Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.		
				To	28-Mar-24					Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).		
				To	09-Jul-24					Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.		

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
231	TAS Local Government Area / Council: West Tamar	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to TAS Local Government Area / Council: West Tamar based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided TAS Local Government Area / Council: West Tamar with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
232	Tasman Council	EMBA	Function as department or agency of Tasmania local council.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Tasman Council based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>September 2023.</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Tasman Council with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
233	Tasmanian Aboriginal Centre	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Tasmanian Aboriginal Centre based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Tasmanian Aboriginal Centre with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	of this table for further details.								
234	Tasmanian Regional Aboriginal Communities Alliance	EMBA	Organisation representing Traditional Owners	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Tasmanian Regional Aboriginal Communities Alliance based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023. - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Tasmanian Regional Aboriginal Communities Alliance with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
235	Tasmanian Seafood Industry Council	EMBA	<p>Organisation representing the interests of wild capture fishers, marine farmers and seafood processors in Tasmania.</p> <p>Sufficient information has been provided to Tasmanian Seafood Industry Council based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.	
									To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better</p>	

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso sent follow up emails seeking feedback on the proposed activity.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Tasmanian Seafood Industry Council with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>							understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
236	The Nature Conservancy	EMBA	Interest as Environmental conservation charity whose mission is to conserve the lands and waters on which all life depends.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to The Nature Conservancy based on their function, interest and activities as summarised below:</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2023 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided The Nature Conservancy with the opportunity to provide</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				proposed activities and requesting feedback.	feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
237	The Wilderness Society	EMBA	Interest as eNGO working to protect, promote and restore wilderness and natural processes across Australia.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to The Wilderness Society based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided The Wilderness Society with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
238	Trust For Nature	EMBA	Interest as eNGO working to permanently protect habitat on private land to give native plants and animals safe places to live.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Trust For Nature based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in March 2023 and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Trust For Nature with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>								
239	Tuna Australia Ltd	EMBA	Activities representing statutory fishing right owners, holders, fish processors and sellers, and associate members of the Eastern and Western tuna and billfish fisheries of Australia	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Tuna Australia Ltd based on their function, interest and activities as summarised below:</p> <p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023.</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Tuna Australia Ltd with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Tuna Australia responded offering to provide a copy of their Industry position statement and services agreement. Tuna Australia had no queries or responses on the JUR P&A activity.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										From	09-Oct-23	Email	Organisation offering to provide a copy of their Industry position statement and services agreement.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
240	Victoria Game Fishing Club	ATBA	Activities as governing body for Game Fishing in Victoria.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Victoria Game Fishing Club based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Victoria Game Fishing Club with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
241	Victorian Bays and Inlets Fisheries Association	EMBA	Organisation representing Victoria Bay and Inlet commercial fishers.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Victorian Bays and Inlets Fisheries Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Consultation email with information on JUR EP oil spill 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				<p>modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) with activity description, location and potential impacts and seeking feedback sent in September 2023.</p> <p>- Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024.</p> <p>- Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.</p>	<p>for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Victorian Bays and Inlets Fisheries Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>					To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	11-Jul-24	Email	Further consultation on the Jack-Up Rig - Well Plug and Abandonment Environment Plan. Includes link to Information Bulletin #3 (Appendix F-3).
242	Victorian Recreational Fishing	ATBA	Activities as organisation representing Victorian Recreational Fishing in Victoria.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Victorian Recreational Fishing based on their function, interest and activities as summarised below:</p> <p>- Invitation to attend community consultation session in April 2023</p> <p>- Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023.</p> <p>- Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in September 2023, October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Victorian Recreational Fishing with the opportunity to provide feedback over a period greater than 30 days.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	29-Sep-23	Email	Provided JUR P&A information bulletin, oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.					To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
243	Victorian Rock Lobster Association	ATBA	Activities as Victorian Rock Lobster fishing industry representative group.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to Victorian Rock Lobster Association based on their function, interest and activities as summarised below: - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Victorian Rock Lobster Association with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
244	Victorian Scallop Industry Association	ATBA	Activities as commercial scallop fishing representative body.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Victorian Scallop Industry Association based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Esso sent Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback in June 2023. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's Consultation on offshore petroleum environment plans brochure. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Victorian Scallop Industry Association with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
245	Wildlife Victoria	EMBA	Interest as community organisation providing Wildlife Emergency Response.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community drop in session provided in April 2023 - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions,</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better</p>

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				Wildlife Victoria on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	interests or activities. Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024. Esso has provided Wildlife Victoria with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
246	World Wide Fund for Nature	EMBA	Interest as eNGO that works in the field of wilderness preservation and the reduction of human impact on the environment.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided as summarised below: - Esso sent emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 24th July 2023 and continued until this submission in August 2024. Esso has provided World wide fund for nature with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	24-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
					each response' to the right of this table for further details.								
247	Yachting Victoria	EMBA	Interest as organisation providing sailing advice for the South East of Australia.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community drop in session provided in April 2023 - Consultation email with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to Yachting Victoria on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's Consultation on offshore petroleum environment plans brochure and reminder of consultation closing date. These emails included links to Information Bulletin #2 (Appendix F-2) in October 2023 and March 2023, and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Yachting Victoria with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Consultation report (Summary) for Regulation 25(1)(e) relevant persons

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
248	Australian Marine Oil Spill Centre	EMBA	Function as an organisation set up by the petroleum industry to enable a quick and effective response to oil spills around the Australian coastline. Relevant for OPEP.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to Australian Marine Oil Spill Centre on 23 June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in a national, state and relevant local newspapers from April 2023 to August 2023 advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced on 23 June 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Australian Marine Oil Spill Centre with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	Email sent inviting feedback on offshore activities: - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	30-Oct-23	Email	Pre call email is to discuss resource and support requirements from AMOSC which Esso is including in regulatory permissioning documents which will be submitted to NOPSEMA in the next month.
										From	03-Nov-23	Email	AMOSC confirming ability to fulfill support requirements.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
249	Gippsland Forestec TAFE (Kalmina)	EMBA	Activities as Victorian tertiary institution.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Gippsland Forestec TAFE (Kalmina) based on their</p>	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				function, interest and activities as summarised below: - Consultation emails provided links to Information Bulletin #2 (Appendix F-2) and Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback. - Esso sent additional email with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's "Consultation on offshore petroleum environment plans brochure". - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in July 2023 and continued until this submission in August 2024. Esso has provided Gippsland Forestec TAFE (Kalmina) with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
250	National Native Title Tribunal (NNTT)	EMBA	Functions as an independent body established under the Native Title Act 1993 in Australia as a special measure for the advancement and protection of Aboriginal and Torres Strait Islander peoples. It manages applications for and administration of native title in Australia.	Esso considers it has discharged its obligations for consultation under Regulation 25(2). Sufficient information has been provided to National Native Title Tribunal (NNTT) based on their function, interest and activities as summarised below: - Consultation emails with information on JUR EP oil spill modelling, EMBA and links to Information Bulletin #2 (Appendix F-2) and Information Bulletin #3 (Appendix F-3) with activity description, location and potential impacts and seeking feedback. - Esso sent email with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's "Consultation on offshore petroleum environment plans brochure". - Esso published advertisements in national, state and relevant local newspapers in April	Esso considers it has discharged its obligations for consultation under Regulation 25(3). Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced in September 2023 and continued until this submission in August 2024. Esso has provided National Native Title Tribunal (NNTT) with the opportunity to provide feedback over a period greater than 30	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	29-Sep-23	Email	Provided Information Bulletin #2 (Appendix F-2), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Esso Australia Consultation: Consultation on offshore activities (EMBA). Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				(Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback.	days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.								
251	Port of Hastings	EMBA	Function as responsible for managing the operations at the Port of Hastings, including maintaining the associated port infrastructure.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided to Port of Hastings based on their function, interest and activities as summarised below:</p> <ul style="list-style-type: none"> - Invitation to attend community consultation session in April 2023 - Information Bulletin #1 (Appendix F-1) with activity description, location and potential impacts and seeking feedback provided to Port of Hastings on 23rd June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, oil spill modelling, EMBA, Consultation Questionnaire, and NOPSEMA's "Consultation on offshore petroleum environment plans brochure". - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent follow up emails seeking feedback on the proposed activity. - Esso published advertisements in national, state and relevant local newspapers in April (Appendix G-1) and August 2023 (Appendix G-2) advising of the proposed activities and requesting feedback. 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities.</p> <p>Sufficient time has been provided as consultation commenced in April 2023 and continued until this submission in August 2024.</p> <p>Esso has provided Port of Hastings with the opportunity to provide feedback over a period greater than 30 days.</p> <p>Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	13-Apr-23	Email	EAPL provided stakeholder with 2022 Annual Decommissioning Report and notified them of up-coming community drop-in session 18/04/2023.
										To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP <p>Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).</p>
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.
252	Victorian Regional Channels Authority	EMBA	Function as Victorian State government agency/authority managing commercial navigation in the port waters of Geelong and Hastings.	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(2).</p> <p>Sufficient information has been provided as summarised below:</p> <ul style="list-style-type: none"> - Information Bulletin #1 (Appendix F-1) with activity 	<p>Esso considers it has discharged its obligations for consultation under Regulation 25(3).</p> <p>Esso considers that for the nature and scale of the activity as described in this</p>	Not applicable as no responses were received.	There were no objections or claims on this activity.	Not applicable as no objections or claims were made.	No additional measures or controls are required	To	23-Jun-23	Email	<p>Email sent inviting feedback on offshore activities:</p> <ul style="list-style-type: none"> - Gudgeon-1 and Terakihi-1 P&A - Jack up rig - Geotechnical and geophysical EP - SEA CCS - Decommissioning - Bass Strait State Waters EP

Ref	Person/organisation	Reg 25(1)		Reg 25(2) sufficient information	Reg 25(3) sufficient time	Summary of responses received and Esso's consideration and response	Summary of objection or claim	Reg 24(b)(ii) & (iii) Esso's assessment of merits of objection or claim and its response	Reg 34(g) (ii) Environment Plan controls	Reg 24(b)(i) Summary of each response			
		Geo. area	Function, interest or activity							To/From	Date	Correspondence method	Correspondence summary
				description, location and potential impacts and seeking feedback provided to Victorian Regional Channels Authority on 23rd June 2023 based on their function, interest and activities. - Esso sent additional emails with links to the Esso Consultation Hub on the public website with proposed activity information, the Esso Consultation Questionnaire to better understand relevant person consultation wishes, NOPSEMA's "Consultation on offshore petroleum environment plans brochure" and reminder of consultation closing date. - Emails were issued containing links to Information Bulletin #2 (Appendix F-2) in October 2023 and Information Bulletin #3 (Appendix F-3) in July 2024. - Esso sent multiple follow up emails seeking feedback on the proposed activity. - Esso published advertisements in a national, state and relevant local newspapers from April 2023 to August 2023 advising of the proposed activities and requesting feedback.	EP, the minimum 30 business days would provide a reasonable period for relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities. Sufficient time has been provided as consultation commenced on 23rd June 2023 and continued until this submission in August 2024. Esso has provided Victorian Regional Channels Authority with the opportunity to provide feedback over a period greater than 30 days. Refer to columns headed 'Reg 24 (b) (i) Summary of each response' to the right of this table for further details.							Link and QR code provided to an Esso Consultation Questionnaire to better understand relevant person consultation wishes and link to NOPSEMA's Consultation on offshore petroleum environment plans brochure. Includes link to Information Bulletin #1 (Appendix F-1).	
										To	11-Jul-23	Email	Email sent to introduce the Esso Consultation Hub
										To	08-Oct-23	Email	Update on current activities - links to proposed activity information available via Consultation hub e.g. Information Bulletin #2 (Appendix F-2) and webpages, including EMBA information and consultation closing dates.
										To	28-Mar-24	Email	Consultation on offshore activities - G&G EP Revision, Kipper Subsea Drilling, SPJ decommissioning update, JUR P&A, Turrum Phase 3 drilling, CCS. Includes link to Information Bulletin #2 (Appendix F-2).
										To	06-Jul-24	Email	Provided Information Bulletin #3 (Appendix F-3), oil spill modelling, EMBA, definition of relevant person, and link to Consultation Hub.

Appendix F: Sufficient Information materials

Appendix F-1 Information Bulletin #1 (June 2023)



ExxonMobil

Well plug and abandonment

Jack-up rig

After having delivered energy to Australia for over 50 years, some of Esso's Bass Strait facilities are no longer producing oil and gas. Esso is focused on safely shutting-down non-producing facilities and ensuring they stay safe throughout the entire decommissioning process. At the same time, Esso is continuing to safely operate the still producing offshore platforms and subsea facilities in the Bass Strait.

Esso is planning to plug and abandon (P&A) 21 platform-based wells and five subsea wells in the Gippsland Basin, off the Victorian coastline. P&A is the industry term for the permanent closure of a well. Well P&A is a safe and long-standing practice. Esso also plans to install conductors at one platform and potentially undertake geotechnical survey work.

All P&A activities will be undertaken by a third-party contracted jack-up rig (JUR), as pictured on the cover. The JUR will operate in accordance with international safety and environmental standards, and will hold a Safety Case accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), the Australian regulator.

This information bulletin has been developed as part of Esso's commitment to keep relevant persons and other stakeholders informed of planned activities in Bass Strait and to provide relevant persons with sufficient information about the nature and scale of the activity, as well as its potential risks and impacts, so that they can make an informed decision as to whether their functions, interests or activities are affected.

Activity description

The planned activities involve the P&A of platform-based wells that are no longer producing and subsea exploration wells, which were suspended for potential future use but are no longer required. All wells will be safely P&A'd in accordance with a NOPSEMA-accepted Well Operations Management Plan (WOMP) and Environment Plan (EP). Seismic activity is not required.

To prevent the accidental release of hydrocarbons during P&A activities, a mechanism called a blowout preventer will be put into place. This involves installing cement plugs in the wellbores to permanently isolate any hydrocarbon reservoirs.

ACTIVITY LOCATIONS



Subsea wellheads and conductors will be cut at or below the seabed and removed. The JUR will also remove the wellheads and conductors from the platform-based wells.

The conductor installation activity will consist of up to five conductors installed using a hydraulic hammer.

The geotechnical survey work involves acquiring near-seabed core samples of the local geology at and around the three well locations, with up to three cores at each location.

Activity location

The P&A activity involves 26 wells across eight locations in the Bass Strait, south-east of Lakes Entrance. The subsea wells are located at the Marlin-1, Whiptail-1A, Mulloway-1, Halibut-1 and East Pilchard-1 well sites, while the platform-based wells are at the Bream B, Perch and Dolphin platforms. The conductor installation activity will occur at the Marlin B platform while the geotechnical survey work will potentially be undertaken at the Bream 2, 3 and 5 wells.

None of the activities are located within established or proposed Commonwealth or State Marine Protected Areas, Critical Habitats or Threatened Ecological Communities.

While conducting these activities, the JUR will potentially be visible from the shore at some locations.

Potential impacts and control measures

Provided in the following pages are the key potential impacts and control measures relating to the activities to assist relevant persons in making an informed assessment of possible impacts to their functions, interests or activities in the area.

Once completed, the activities will eliminate the risk of any loss of hydrocarbon containment and will remove obstructions and snag points for commercial fishing.

Petroleum Safety Zones and Notice to Mariners

A 500-metre PSZ around the wells will be established by NOPSEMA for the duration of the activity, in accordance with Section 616 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*.

The exact location of the JUR will be communicated to other marine vessels via a Notice to Mariners issued by the Australian Hydrographic Service and AUSCOAST warnings issued by the Australian Maritime Safety Authority.

Interaction with commercial fishing

The well sites are located within existing designated Commonwealth fisheries that may be used by commercial fishers.

The 500-metre PSZ will be communicated to the Lakes Entrance Fishermen's Co-op, South East Trawl Fishing Industry Association and Seafood Industry Victoria as it is a legal requirement that the area should be avoided during petroleum-related activities.

Environment Plan

Under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, before any petroleum-related activities in Commonwealth waters can commence, an EP must be accepted by NOPSEMA.

A single EP is proposed to be developed for the P&A of 26 wells, conductor installation activities and geotechnical survey work.

The EP is a comprehensive document that describes the existing environment, including relevant persons, and how Esso will undertake the activities to avoid, minimise or manage potential environmental impacts to As Low As Reasonable Practicable (ALARP) and meet regulatory acceptability criteria. Achieving ALARP requires a titleholder to implement all available control measures where the cost is not grossly disproportionate to the environmental benefit gained from implementing the control measure.

In the course of preparing an EP, Esso must consult with relevant authorities, persons and organisations whose functions, interests or activities may be affected by the proposed activities (i.e. a relevant person) and provide the opportunity for any concerns, objections or claims to be raised.



OIL POLLUTION EMERGENCY PLAN

Under Commonwealth environment legislation, Esso must demonstrate and document oil spill response arrangements. The Oil Pollution Emergency Plan (OPEP) forms part of an EP submission and demonstrates Esso's capability to respond in the unlikely event of an oil spill.

Esso is a member of the Australian Marine Oil Spill Centre, a co-operative national oil spill response organisation, which provides access to additional oil spill response resources if required.

Esso's OPEP interfaces with national, state and industry response plans prepared and implemented by the Australian Government via the Australian Maritime Safety Authority (NATPLAN), the Victorian Government (Maritime Emergencies (non-search and rescue) Plan), the Tasmanian Government (TASPLAN), the NSW Government (NSW Marine Oil and Chemical Spill Contingency Plan) and the Australian Oil industry's Australian Marine Oil Spill Plan (AMOSPLAN) administered by the Australian Marine Oil Spill Centre.

The OPEP defines spill response options which may be applied to a spill event. The selected spill response option(s) would depend upon the size and type of spill; environmental sensitivities within the spill path; prevailing weather conditions; access restrictions and available resources. In all instances, a Net Environmental Benefits Assessment is undertaken, in consultation with relevant government agencies, to determine the most appropriate spill response option.



ACTIVITY TIMING

Earliest date of commencement

Q4 2024

All activities completed within

2.5 years

Field activities estimated to take

30 days per well

Activities will be conducted

24/7

POTENTIAL IMPACTS, CONSEQUENCES AND CONTROL MEASURES

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Physical presence - Seabed disturbance	Smothering/alteration of benthic habitats; localised and temporary increase in turbidity near the seabed	<ul style="list-style-type: none"> • Site-specific geotechnical assessment to confirm no sensitive seabed features. • JUR will be soft pinned while undertaking geotechnical survey work. • Seabed grab sampling and coring activities are extremely localised. • Core holes are very narrow and will collapse in on themselves and small surface 'craters' will quickly fill in with sediments and recolonise with benthic fauna.
Planned discharges to the marine environment ¹	Temporary and localised reduction in water quality; temporary change to predator/prey dynamics	<ul style="list-style-type: none"> • Routine discharges and vessel waste treatment systems are maintained to meet the requirements of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978, (MARPOL 73/78). • Food scraps will be macerated prior to discharge. • Discharged bilge water will have less than 15 parts per million oil in water content. • Chemicals planned for discharge will undergo an environmental assessment to confirm suitability for discharge prior to use.
Sound emissions	Temporary displacement of sound sensitive fauna around active vessels	<ul style="list-style-type: none"> • Support vessels and helicopters will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000 Part 8 Division 8.1</i> interacting with cetaceans, for example helicopters adhering to strict distances from cetaceans when sighted. • During specific months a Marine Mammal Observer will be placed on the JUR to aid in sighting and reporting of whales. • If certain listed species of whales are spotted, additional controls are in place to help protect and minimise noise disturbance. • Sound modelling being undertaken for conductor installation activity.
Light emissions	Attraction of light sensitive species; change in fauna behaviour	<ul style="list-style-type: none"> • Lighting will be used in accordance with the National Light Pollution Guidelines for Wildlife. • Lighting will be kept to a minimum while still meeting navigational and workplace safety requirements.
Air emissions	Temporary and localised reduction in air quality	<ul style="list-style-type: none"> • Marine engines are routinely maintained and air emissions will meet MARPOL 73/78 requirements. • No requirement for any planned flaring or venting.
Unplanned interaction with marine fauna (vessel strike)	Injury or death of marine fauna	<ul style="list-style-type: none"> • Support vessels will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000 Part 8 Division 8.1</i>. • Any injury/mortality of <i>Environment Protection and Biodiversity Conservation Act 1999</i>-listed fauna will be reported to the Department of Climate Change, Energy, the Environment and Water.
Unplanned introduction of Invasive Marine Species	Displacement of native species and habitat domination	<ul style="list-style-type: none"> • JUR and all support vessels will have a Ballast Water Management Plan and associated certificate. • JUR and all support vessels will comply with Australian Ballast Water Management requirements. • A Biofouling Risk Assessment process will be completed. • Submersible equipment (Remotely Operated Vehicle) will be rinsed on completion of each activity and is normally stored on deck, thereby minimising Invasive Marine Species risk.

¹ Including treated sewage and food waste, treated bilge and deck wash, and cooling water and brine.

POTENTIAL IMPACTS, CONSEQUENCES AND CONTROL MEASURES

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Well fluid discharges	Increased salinity; potential toxicity effects	<ul style="list-style-type: none"> • Low toxicity chemical additives will be selected for use in abandonment and completion fluids. • Chemicals used in well fluids will undergo environmental assessment to confirm suitability for discharge prior to use.
Disconnection discharges	Localised and temporary: reduction in water quality; smothering of benthic habitats	<ul style="list-style-type: none"> • Chemicals planned for discharge will undergo environmental assessment to confirm suitability for discharge.
Naturally Occurring Radioactive Material (NORM)	Temporary exposure of marine fauna to radioactive material	<ul style="list-style-type: none"> • No NORM expected. If production tubing is removed from a well, it will be tested for NORM. • Any NORM found will be treated as prescribed waste, transported back to shore in accordance with the waste management manual.
Vessel collisions	Vessel impacts; injury or death; spill risk; interruption to plug and abandonment activities	<ul style="list-style-type: none"> • Marine users will be informed (including Notices to Mariners) prior to commencement of the P&A activities so they will be able to plan their activities and avoid unexpected interactions. • PSZ established in accordance with the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> at least one month before start of field activities. • Establishment of adequate navigation aids and communication systems. • Implementation of vessel communication procedures. • Relevant persons whose activities are within the activity location will be notified of activities approximately four weeks and again one week prior to commencement.
Loss of well control	Potential toxicity; oiling of fauna; reduction in visual aesthetic; socioeconomic impacts to the fishing and tourism industries	<ul style="list-style-type: none"> • NOPSEMA-accepted WOMP prior to commencement. • NOPSEMA-accepted Safety Case prior to commencement of activity. • Esso-approved P&A procedures. • Preventative maintenance systems in place. • Well control equipment testing. • Emergency response preparedness including: Oil Pollution Emergency Plan; Operational and Scientific Monitoring Plan; Source Control Plan; availability of suitable Mobile Offshore Drilling Unit to drill a relief well; and P&A Bridging Emergency Response Plan.

Esso Australia Resources Pty Ltd (EARPL) and Woodside Energy (Bass Strait) Pty Ltd are 50:50 co-venturers in a joint venture for the exploration, development and production of oil and gas from Bass Strait and are the owners of the Longford Facility. EARPL is the designated Operator of the joint venture under the Gippsland Basin Joint Venture Operating Agreement. EARPL receives services, including personnel, from its wholly owned subsidiary, Esso Australia Pty Ltd (Esso). Esso, which is also a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is "operator" as defined in the Victorian *Occupational Health and Safety Regulations 2017*.



ExxonMobil

Esso is committed to ongoing engagement with the communities where we operate. Esso has been consulting with relevant persons potentially affected by this activity through a number of different channels. We will continue to address questions, concerns, objections or claims and consider feedback from relevant persons throughout this activity.

Esso welcomes the opportunity for more face-to-face meetings and will continue to keep relevant persons informed of the proposed activities throughout the planning phase and into the execution phase.

If you have any specific questions or feedback about any of these activities please contact Esso at:

consultation@exxonmobil.com

or call:

+61 3 9261 0000

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ABN 49 000 018 566
exxonmobil.com.au



Appendix F-2 Information Bulletin #2 (September 2023)



ExxonMobil

CONSULTATION

Bass Strait Operations

Jack-Up Rig - Well Plug and Abandonment

INFORMATION BULLETIN
September 2023

Esso is committed to engaging with the communities where we operate and helping our stakeholders to understand our business.

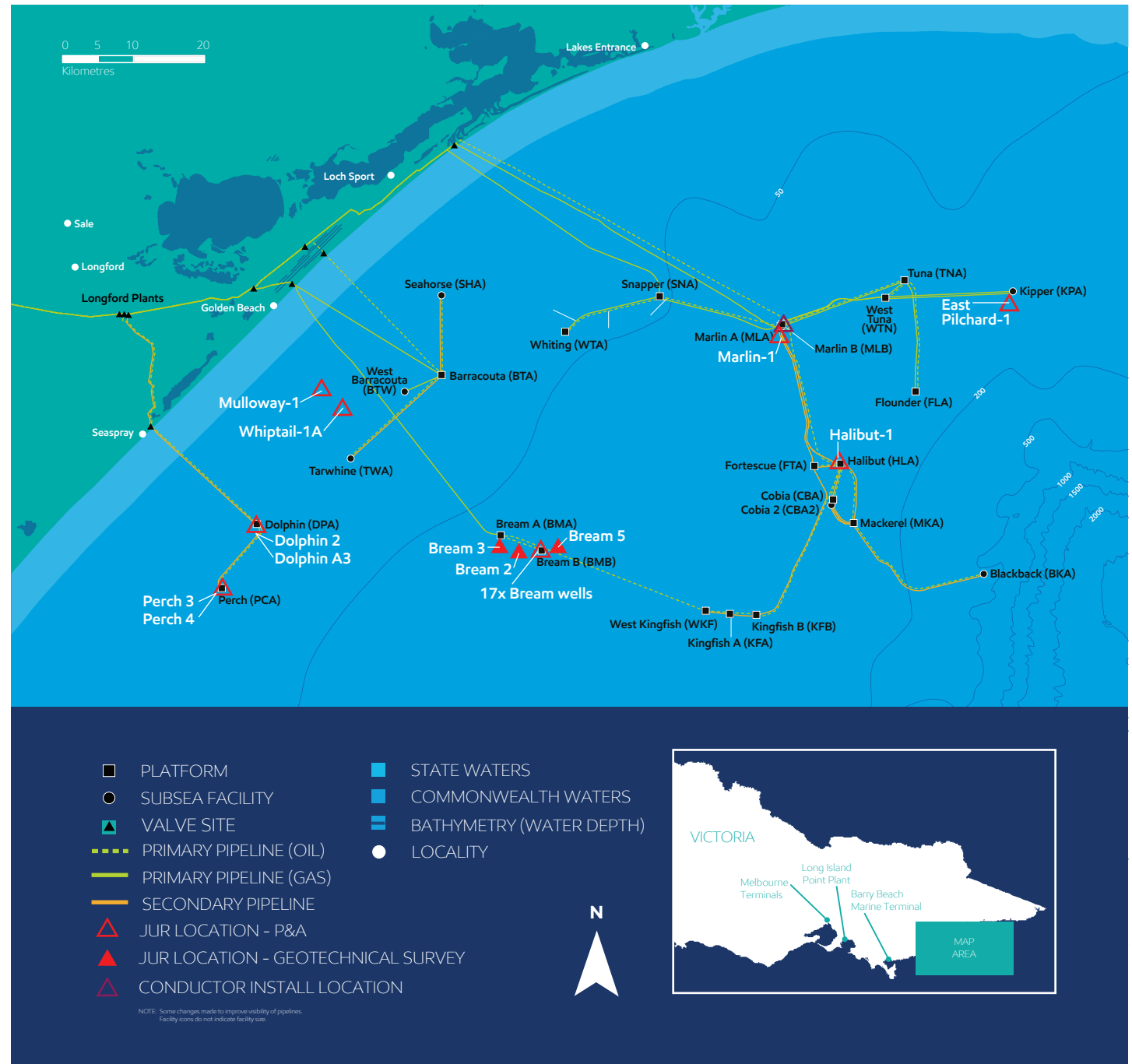
This information bulletin has been developed as part of Esso's commitment to keep relevant persons and other stakeholders informed of planned activities in Bass Strait and to provide them with sufficient information about the nature and scale of the activity, as well as its potential risks and impacts, so that they can make an informed decision as to whether their functions, interests or activities are affected.

Overview

Esso Australia Resources Pty Ltd (Esso) is a wholly owned subsidiary of ExxonMobil Australia Pty Ltd. Esso is the operator of the assets in Bass Strait that are part of the Gippsland Basin Joint Venture between Esso and Woodside Energy (Bass Strait) Pty Ltd (Woodside Energy) and the Kipper Unit Joint Venture (Esso, Woodside Energy, and MEPAU A Pty Ltd). These assets comprise 19 platforms with approximately 400 wells, six subsea facilities and more than 800 kilometres of subsea pipelines.

Esso is planning to plug and abandon (P&A) 21 platform-based wells and five subsea wells in the Gippsland Basin, off the Victorian coastline. P&A is the industry term for the permanent closure of a well. Well P&A is a safe and long-standing practice. Esso also plans to install conductors at Marlin B and potentially undertake geotechnical survey work around the Bream wells. All P&A activities will be undertaken by a third-party contracted jack-up rig (JUR), as pictured on the cover.

The JUR will operate in accordance with international safety and environmental standards, and will hold a Safety Case accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), the Australian regulator.



Activity timing

Earliest date of commencement

4Q 2024

Field activities estimated to take

30 days per well

Activities will be conducted

24/7

The timing and order of activity may vary and is contingent on regulatory approvals, joint venture approvals, weather and rig/vessel schedules. Consultation will be conducted with relevant persons prior to the commencement of plug and abandonment activities.

Activity description

The planned activities involve the P&A of platform-based wells that are no longer producing and subsea exploration wells, which were suspended for potential future use but are no longer required. All wells will be safely P&A'd in accordance with a NOPSEMA-accepted Well Operations Management Plan and Environment Plan (EP). Seismic activity is not required.

The P&A activity involves the installation of cement plugs in the wellbores to permanently isolate any hydrocarbon reservoirs from surface.

Accidental release of hydrocarbons during P&A activities, will be prevented with a mechanical device called a blowout preventer which will be installed on each well during the P&A activity.

Subsea wellheads and conductors will be cut at or below the seabed and removed. The JUR will also remove the wellheads and conductors from the platform-based wells.

The conductor installation activity will consist of up to five conductors installed using a hydraulic hammer.

The geotechnical survey work involves acquiring near-seabed core samples of the local geology at and around three well locations, with up to three cores at each location.

Activity location

The P&A activity involves 26 wells across eight locations in the Bass Strait, south-east of Lakes Entrance. The subsea wells are located at the Marlin-1, Whiptail-1A, Mulloway-1, Halibut-1 and East Pilchard-1 well sites, while the platform-based wells are at the Bream B, Perch and Dolphin platforms.

The conductor installation activity will occur at the Marlin B platform while the geotechnical survey work will potentially be undertaken at the Bream 2, 3 and 5 wells.

None of the activities are located within established or proposed Commonwealth or State Marine Protected Areas, Critical Habitats or Threatened Ecological Communities.

While conducting these activities, the JUR will potentially be visible from the shore at some locations.



ENVIRONMENT PLAN

Under the OPPGS Act, before any petroleum-related activities in Commonwealth waters can commence, an EP must be accepted by NOPSEMA. A single EP is proposed to be developed for the P&A of 26 wells, conductor installation activities and geotechnical survey work.

The EP is a comprehensive document that describes the existing environment, including relevant persons, and how Esso will undertake the drilling activities to avoid, minimise or manage potential environmental impacts to As Low As Reasonably Practicable (ALARP) and meet regulatory acceptability criteria. Demonstrating ALARP requires a titleholder to implement all available control measures where the cost is not grossly disproportionate to the environmental benefit gained from implementing the control measure.

In the course of preparing an EP, Esso must consult with relevant authorities, persons and organisations whose functions, interests or activities may be affected by the proposed activities (i.e. a relevant person) and provide the opportunity for any feedback.

Petroleum Safety Zones and Notice to Mariners

A 500-metre Petroleum Safety Zone (PSZ) around the wells will be established by NOPSEMA for the duration of the activity, in accordance with Section 616 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act).

The exact location of the JUR will be communicated to other marine vessels via a Notice to Mariners issued by the Australian Hydrographic Service and AUSCOAST warnings issued by the Australian Maritime Safety Authority.

Interaction with commercial fishing

The activity locations are located within existing Commonwealth fisheries that may be used by commercial fishers.

The 500-metre PSZ will be communicated to the Lakes Entrance Fishermen's Co-op, South East Trawl Fishing Industry Association and Seafood Industry Victoria as it is a legal requirement that the area be avoided during petroleum-related activities.

Potential impacts, consequences and control measures

Esso's aim is to minimise environmental and social impacts associated with the proposed activities. As such, Esso has undertaken an assessment to identify potential impacts and consequences to the environment resulting from the proposed activities, considering timing, duration, location, values and sensitivities.

For each potential impact, Esso has developed the control measures outlined on the following pages to assist relevant persons in making an informed assessment of possible impacts to their functions, interests or activities.

Once completed, the activities will eliminate the risk of any loss of hydrocarbon containment and will remove obstructions and snag points for commercial fishing.



↑ EnSCO-107 Jack-Up Rig

→ OIL POLLUTION EMERGENCY PLAN

In accordance with the OPPGS Act, Esso must demonstrate and document oil spill response arrangements. The Oil Pollution Emergency Plan (OPEP) forms part of an EP submission and demonstrates Esso's capability to respond in the unlikely event of an oil spill.

Esso is a member of the Australian Marine Oil Spill Centre, a co-operative national oil spill response organisation, which provides access to additional oil spill response resources if required.

Esso's OPEP interfaces with national, state and industry response plans prepared and implemented by the Australian Government via the Australian Maritime Safety Authority (NatPlan), the Victorian Government (Maritime Emergencies (non-search and rescue) Plan), the Tasmanian Government (TasPlan), the NSW Government (NSW Marine Oil and Chemical Spill Contingency Plan) and the Australian Oil industry's Australian Marine Oil Spill Plan (AMOSPlan) administered by the Australian Marine Oil Spill Centre.

The OPEP defines spill response options which may be applied to a spill event. The selected spill response option(s) would depend upon the size and type of spill; environmental sensitivities within the spill path; prevailing weather conditions; access restrictions and available resources. In all instances, a Net Environmental Benefits Assessment is undertaken, in consultation with relevant government agencies, to determine the most appropriate spill response option.

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Physical presence - Seabed disturbance	Smothering/alteration of benthic habitats; localised and temporary increase in turbidity near the seabed	<ul style="list-style-type: none"> • Site-specific geotechnical assessment to confirm no sensitive seabed features. • JUR will be soft pinned while undertaking geotechnical survey work. • Seabed grab sampling and coring activities are extremely localised. • Core holes are very narrow and will collapse in on themselves and small surface 'craters' will quickly fill in with sediments and recolonise with benthic fauna.
Planned discharges to the marine environment ¹	Temporary and localised reduction in water quality; temporary change to predator/prey dynamics	<ul style="list-style-type: none"> • Routine discharges and vessel waste treatment systems are maintained to meet the requirements of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978, (MARPOL 73/78). • Food scraps will be macerated prior to discharge. • Discharged bilge water will have less than 15 parts per million oil in water content. • Chemicals planned for discharge will undergo an environmental assessment to confirm suitability for discharge prior to use.
Sound emissions	Temporary displacement of sound sensitive fauna around active vessels	<ul style="list-style-type: none"> • Support vessels and helicopters will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> Part 8 Division 8.1 interacting with cetaceans, for example helicopters adhering to strict distances from cetaceans when sighted. • During specific months a Marine Mammal Observer will be placed on the JUR to aid in sighting and reporting of whales. • If certain listed species of whales are spotted, additional controls are in place to help protect and minimise noise disturbance. • Sound modelling has been undertaken for conductor installation activity, indicating extremely localised distances to effect for marine mammals and fish.
Light emissions	Attraction of light sensitive species; change in fauna behaviour	<ul style="list-style-type: none"> • Lighting will be used in accordance with the National Light Pollution Guidelines for Wildlife. • Lighting will be kept to a minimum while still meeting navigational and workplace safety requirements. • No requirement for any planned flaring.
Air emissions	Temporary and localised reduction in air quality	<ul style="list-style-type: none"> • Marine engines are routinely maintained and air emissions will meet MARPOL 73/78 requirements. • No requirement for any planned flaring or venting.
Unplanned interaction with marine fauna (vessel strike)	Injury or death of marine fauna	<ul style="list-style-type: none"> • Support vessels will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> Part 8 Division 8.1. • Any injury/mortality of <i>Environment Protection and Biodiversity Conservation Act 1999</i>-listed fauna will be reported to the Department of Climate Change, Energy, the Environment and Water.
Unplanned introduction of invasive marine species	Displacement of native species and habitat domination	<ul style="list-style-type: none"> • JUR and all support vessels will have a Ballast Water Management Plan and associated certificate. • JUR and all support vessels will comply with Australian Ballast Water Management requirements. • A Biofouling Risk Assessment process will be completed. • Submersible equipment (Remotely Operated Vehicle) will be rinsed on completion of each activity and is normally stored on deck, thereby minimising invasive marine species risk.

¹ Including treated sewage and food waste; treated bilge and deck wash; and cooling water and brine.

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Discharge of cement	Temporary and localised reduction in water quality; smothering	<ul style="list-style-type: none"> • Low toxicity cement additives have been selected for use. • Low Volumes of cement will be discharged. • Cement hose flushing and slurry releases will be rapidly diluted and dispersed by the dynamic marine environment.
Well fluid discharges	Increased salinity; potential toxicity effects	<ul style="list-style-type: none"> • Low toxicity chemical additives will be selected for use in abandonment and completion fluids. • Chemicals used in well fluids will undergo environmental assessment to confirm suitability for discharge prior to use.
Disconnection discharges	Localised and temporary: reduction in water quality; smothering of benthic habitats	<ul style="list-style-type: none"> • Chemicals planned for discharge will undergo environmental assessment to confirm suitability for discharge.
Naturally Occurring Radioactive Material (NORM)	Temporary exposure of marine fauna to radioactive material	<ul style="list-style-type: none"> • No NORM expected. If production tubing is removed from a well, it will be tested for NORM. • Any NORM found will be treated as prescribed waste, transported back to shore in accordance with the waste management manual.
Vessel collisions	Vessel impacts; injury or death; spill risk; interruption to plug and abandonment activities	<ul style="list-style-type: none"> • Marine users will be informed (including Notices to Mariners) prior to commencement of the P&A activities so they will be able to plan their activities and avoid unexpected interactions. • PSZ established in accordance with the OPGGS Act at least one month before start of field activities. • Establishment of adequate navigation aids and communication systems. • Implementation of vessel communication procedures. • Relevant persons whose activities are within the activity location will be notified of activities approximately four weeks and again one week prior to commencement.
Loss of well control	Potential toxicity; oiling of fauna; reduction in visual aesthetic; socioeconomic impacts to the fishing and tourism industries	<ul style="list-style-type: none"> • NOPSEMA-accepted Well Operations Management Plan prior to commencement. • NOPSEMA-accepted Safety Case prior to commencement of activity. • Esso-approved P&A procedures. • Preventative maintenance systems in place. • Well control equipment testing. • Emergency response preparedness including: OPEP; Operational and Scientific Monitoring Plan; Source Control Plan; availability of suitable Mobile Offshore Drilling Unit to drill a relief well; and P&A Bridging Emergency Response Plan.



Environment that may be affected

The environment that may be affected (EMBA) is the largest spatial extent where the activities could potentially have an environmental consequence (direct or indirect impact). For this activity, the broadest extent of the EMBA is determined by a highly unlikely release of hydrocarbons from a loss of well containment. The EMBA represents the area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of activity loss of well containment from this activity.

Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill could occur.

The EMBA is not representative of a single spill; an individual spill would affect a significantly smaller area. For this activity, Esso has defined the EMBA by combining the potential spatial extent of surface and in-water (dissolved and entrained) hydrocarbons, resulting from a loss of well containment.

Consultation

Esso is committed to ongoing engagement with the communities where we operate. Your functions, interests and activities may mean you, your business or your organisation are a relevant person for these activities. Your participation will help Esso to better understand the impacts and risks that may arise from the activities. As such, we're seeking your feedback as we develop the EP. Please note that your feedback and our response will be included in our EP for the proposed activities, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Please let us know if your feedback is sensitive and we will make this known to NOPSEMA upon submission of the EP in order for this information to remain confidential to NOPSEMA. Esso will communicate any material changes to the proposed activity to relevant persons as they arise.

If you would like to comment on the proposed activities outlined in this information bulletin, or would like additional information, please contact us.



How to contact us

For more information, visit our Consultation Hub using the QR Code below, or contact our Consultation team at:

T: +61 3 9261 0000

E: consultation@exxonmobil.com

W: www.exxonmobil.com.au



Scan to access the
Consultation Hub and
Esso Consultation Questionnaire

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ABN 49 000 018 566

Acknowledgement of traditional owners



Esso Australia acknowledges the Traditional Custodians of Country, the Gunaikurnai Peoples, and the land and sea upon which our operations are located.

We recognise the Gunaikurnai Peoples' continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.

Appendix F-3 Information Bulletin #3 (July 2024)



ExxonMobil

CONSULTATION

Bass Strait Operations

Jack-Up Rig - Well Plug and Abandonment

INFORMATION BULLETIN
July 2024

Esso is committed to engaging with the communities where we operate and helping our stakeholders to understand our business.

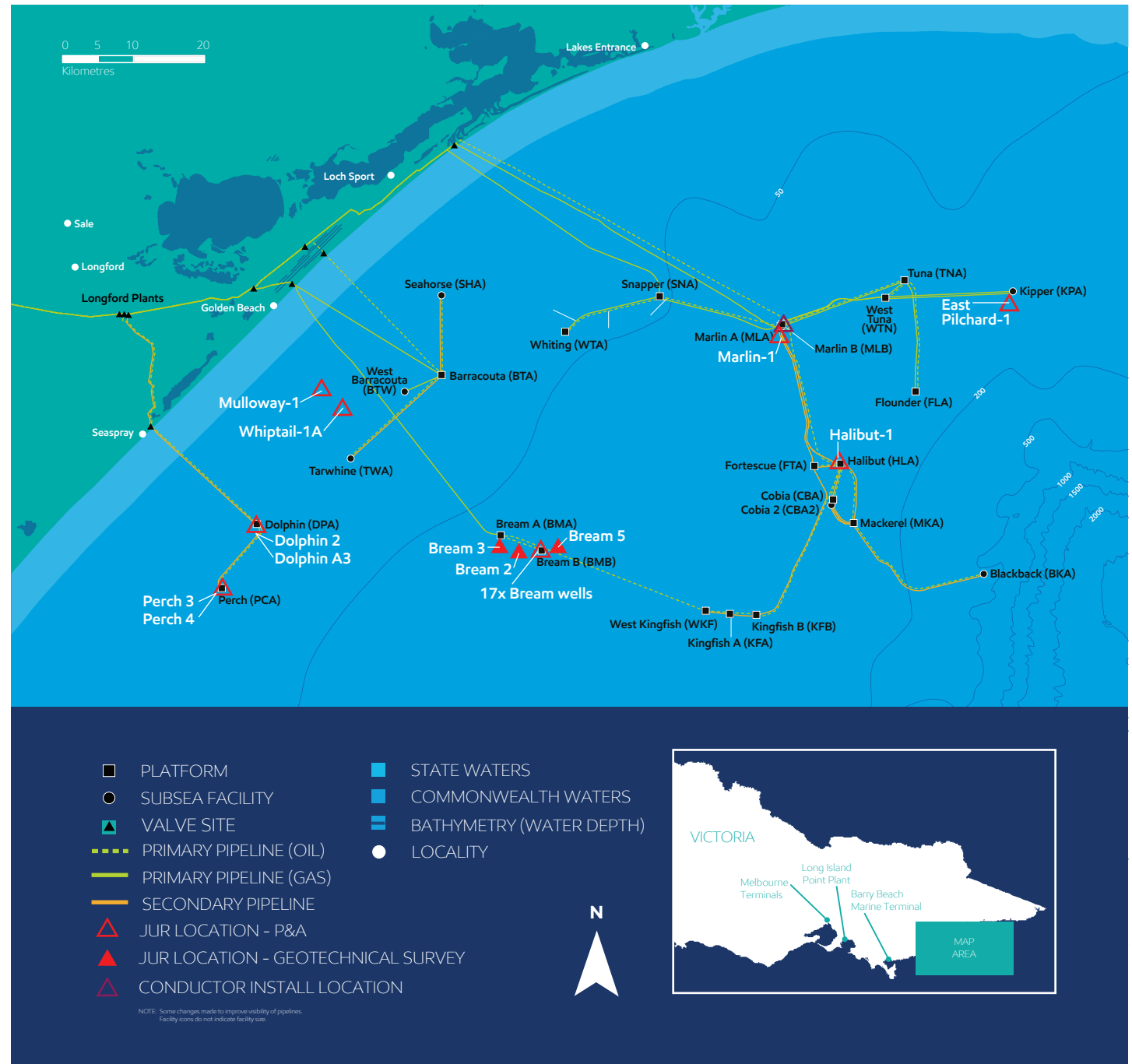
This information bulletin has been developed as part of Esso's commitment to keep relevant persons and other stakeholders informed of planned activities in Bass Strait and to provide them with sufficient information about the nature and scale of the activity, as well as its potential risks and impacts, so that they can make an informed decision as to whether their functions, interests or activities are affected.

Overview

Esso Australia Resources Pty Ltd (Esso) is a wholly owned subsidiary of ExxonMobil Australia Pty Ltd. Esso is the operator of the assets in Bass Strait that are part of the Gippsland Basin Joint Venture between Esso and Woodside Energy (Bass Strait) Pty Ltd (Woodside Energy) and the Kipper Unit Joint Venture (Esso, Woodside Energy, and MEPAU A Pty Ltd). These assets comprise 19 platforms with approximately 400 wells, six subsea facilities and more than 800 kilometres of subsea pipelines.

Esso is planning to plug and abandon (P&A) 21 platform-based wells and five subsea wells in the Gippsland Basin, off the Victorian coastline. P&A is the industry term for the permanent closure of a well. Well P&A is a safe and long-standing practice. Esso also plans to install conductors at Marlin B and potentially undertake geotechnical survey work around the Bream wells. All P&A activities will be undertaken by a third-party contracted jack-up rig (JUR), as pictured on the cover.

The JUR will operate in accordance with international safety and environmental standards, and will hold a Safety Case accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), the Australian regulator.



Activity timing

Earliest date of commencement

4Q 2024

Field activities estimated to take

30 days per well

Activities will be conducted

24/7

The timing and order of activity may vary and is contingent on regulatory approvals, joint venture approvals, weather and rig/vessel schedules. Consultation will be conducted with relevant persons prior to the commencement of plug and abandonment activities.

Activity description

The planned activities involve the P&A of platform-based wells that are no longer producing and subsea exploration wells, which were suspended for potential future use but are no longer required. All wells will be safely P&A'd in accordance with a NOPSEMA-accepted Well Operations Management Plan and Environment Plan (EP). Seismic activity is not required.

The P&A activity involves the installation of cement plugs in the wellbores to permanently isolate any hydrocarbon reservoirs from surface.

Accidental release of hydrocarbons during P&A activities, will be prevented with a mechanical device called a blowout preventer which will be installed on each well during the P&A activity.

In the unlikely event of trapped gas, there may be the requirement to undertake venting or flaring of gas depending on the volume.

Subsea wellheads and conductors will be cut at or below the seabed and removed. The JUR will also remove the wellheads and conductors from the platform-based wells.

The conductor installation activity will consist of up to five conductors installed using a hydraulic hammer.

The geotechnical survey work involves acquiring near-seabed core samples of the local geology at and around the Bream location.

Activity location

The P&A activity involves 26 wells across eight locations in the Bass Strait, south-east of Lakes Entrance. The subsea wells are located at the Marlin-1, Whiptail-1A, Mulloway-1, Halibut-1 and East Pilchard-1 well sites, while the platform-based wells are at the Bream B, Perch and Dolphin platforms.

The conductor installation activity will occur at the Marlin B platform while the potential geotechnical survey work will be undertaken at the Bream location.

None of the activities are located within established or proposed Commonwealth or State Marine Protected Areas, Critical Habitats or Threatened Ecological Communities.

While conducting these activities, the JUR will potentially be visible from the shore at some locations.



ENVIRONMENT PLAN

Under the OPPGS Act, before any petroleum-related activities in Commonwealth waters can commence, an EP must be accepted by NOPSEMA. A single EP is proposed to be developed for the P&A of 26 wells, conductor installation activities and geotechnical survey work.

The EP is a comprehensive document that describes the existing environment, including relevant persons, and how Esso will undertake the drilling activities to avoid, minimise or manage potential environmental impacts to As Low As Reasonably Practicable (ALARP) and meet regulatory acceptability criteria. Demonstrating ALARP requires a titleholder to implement all available control measures where the cost is not grossly disproportionate to the environmental benefit gained from implementing the control measure.

In the course of preparing an EP, Esso must consult with relevant authorities, persons and organisations whose functions, interests or activities may be affected by the proposed activities (i.e. a relevant person) and provide the opportunity for any feedback.

Petroleum Safety Zones and Notice to Mariners

A 500-metre Petroleum Safety Zone (PSZ) around the wells will be established by NOPSEMA for the duration of the activity, in accordance with Section 616 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act).

The exact location of the JUR will be communicated to other marine vessels via a Notice to Mariners issued by the Australian Hydrographic Service and AUSCOAST warnings issued by the Australian Maritime Safety Authority.

Interaction with commercial fishing

The activity locations are located within existing Commonwealth fisheries that may be used by commercial fishers.

The 500-metre PSZ will be communicated to the Lakes Entrance Fishermen's Co-op, South East Trawl Fishing Industry Association and Seafood Industry Victoria as it is a legal requirement that the area be avoided during petroleum-related activities.

Potential impacts, consequences and control measures

Esso's aim is to minimise environmental and social impacts associated with the proposed activities. As such, Esso has undertaken an assessment to identify potential impacts and consequences to the environment resulting from the proposed activities, considering timing, duration, location, values and sensitivities.

For each potential impact, Esso has developed the control measures outlined on the following pages to assist relevant persons in making an informed assessment of possible impacts to their functions, interests or activities.

Once completed, the activities will eliminate the risk of any loss of hydrocarbon containment and will remove obstructions and snag points for commercial fishing.



↑ EnSCO-107 Jack-Up Rig

→ OIL POLLUTION EMERGENCY PLAN

In accordance with the OPPGS Act, Esso must demonstrate and document oil spill response arrangements. The Oil Pollution Emergency Plan (OPEP) forms part of an EP submission and demonstrates Esso's capability to respond in the unlikely event of an oil spill.

Esso is a member of the Australian Marine Oil Spill Centre, a co-operative national oil spill response organisation, which provides access to additional oil spill response resources if required.

Esso's OPEP interfaces with national, state and industry response plans prepared and implemented by the Australian Government via the Australian Maritime Safety Authority (NatPlan), the Victorian Government (Maritime Emergencies (non-search and rescue) Plan), the Tasmanian Government (TasPlan), the NSW Government (NSW Marine Oil and Chemical Spill Contingency Plan) and the Australian Oil industry's Australian Marine Oil Spill Plan (AMOSPlan) administered by the Australian Marine Oil Spill Centre.

The OPEP defines spill response options which may be applied to a spill event. The selected spill response option(s) would depend upon the size and type of spill; environmental sensitivities within the spill path; prevailing weather conditions; access restrictions and available resources. In all instances, a Net Environmental Benefits Assessment is undertaken, in consultation with relevant government agencies, to determine the most appropriate spill response option.

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Physical presence - Seabed disturbance	Smothering/alteration of benthic habitats; localised and temporary increase in turbidity near the seabed	<ul style="list-style-type: none"> • Site-specific geotechnical assessment to confirm no sensitive seabed features. • JUR will be soft pinned while undertaking geotechnical survey work. • Seabed grab sampling and coring activities are extremely localised. • Core holes are very narrow and will collapse in on themselves and small surface 'craters' will quickly fill in with sediments and recolonise with benthic fauna.
Planned discharges to the marine environment ¹	Temporary and localised reduction in water quality; temporary change to predator/prey dynamics	<ul style="list-style-type: none"> • Routine discharges and vessel waste treatment systems are maintained to meet the requirements of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978, (MARPOL 73/78). • Food scraps will be macerated prior to discharge. • Discharged bilge water will have less than 15 parts per million oil in water content. • Chemicals planned for discharge will undergo an environmental assessment to confirm suitability for discharge prior to use.
Sound emissions	Temporary displacement of sound sensitive fauna around active vessels	<ul style="list-style-type: none"> • Support vessels and helicopters will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> Part 8 Division 8.1 interacting with cetaceans, for example helicopters adhering to strict distances from cetaceans when sighted. • During specific months a Marine Mammal Observer will be placed on the JUR to aid in sighting and reporting of whales. • If certain listed species of whales are spotted, additional controls are in place to help protect and minimise noise disturbance. • Sound modelling has been undertaken for conductor installation activity, indicating extremely localised distances to effect for marine mammals and fish.
Light emissions	Attraction of light sensitive species; change in fauna behaviour	<ul style="list-style-type: none"> • Lighting will be used in accordance with the National Light Pollution Guidelines for Wildlife. • Lighting will be kept to a minimum while still meeting navigational and workplace safety requirements. • Flaring (if required) would be kept to a minimum whilst meeting operational and safety requirements. • Flare system selection, maintenance and operational procedures in place for efficient flaring operations.
Air emissions	Temporary and localised reduction in air quality	<ul style="list-style-type: none"> • Marine engines are routinely maintained and air emissions will meet MARPOL 73/78 requirements. • Flaring (if required) would be kept to a minimum whilst meeting operational and safety requirements. • Flare system selection, maintenance and operational procedures ensure efficient flaring operations.
Unplanned interaction with marine fauna (vessel strike)	Injury or death of marine fauna	<ul style="list-style-type: none"> • Support vessels will comply with <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> Part 8 Division 8.1. • Any injury/mortality of <i>Environment Protection and Biodiversity Conservation Act 1999</i>-listed fauna will be reported to the Department of Climate Change, Energy, the Environment and Water.

¹ Including treated sewage and food waste; treated bilge and deck wash; and cooling water and brine.

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Unplanned introduction of invasive marine species	Displacement of native species and habitat domination	<ul style="list-style-type: none"> JUR and all support vessels will have a Ballast Water Management Plan and associated certificate. JUR and all support vessels will comply with Australian Ballast Water Management requirements. A Biofouling Risk Assessment process will be completed. Submersible equipment (Remotely Operated Vehicle) will be rinsed on completion of each activity and is normally stored on deck, thereby minimising invasive marine species risk.
Discharge of cement	Temporary and localised reduction in water quality; smothering	<ul style="list-style-type: none"> Low toxicity cement additives have been selected for use. Low Volumes of cement will be discharged. Cement hose flushing and slurry releases will be rapidly diluted and dispersed by the dynamic marine environment.
Well fluid discharges	Increased salinity; potential toxicity effects	<ul style="list-style-type: none"> Low toxicity chemical additives will be selected for use in abandonment and completion fluids. Chemicals used in well fluids will undergo environmental assessment to confirm suitability for discharge prior to use.
Disconnection discharges	Localised and temporary: reduction in water quality; smothering of benthic habitats	<ul style="list-style-type: none"> Chemicals planned for discharge will undergo environmental assessment to confirm suitability for discharge.
Naturally Occurring Radioactive Material (NORM)	Temporary exposure of marine fauna to radioactive material	<ul style="list-style-type: none"> No NORM expected. If production tubing is removed from a well, it will be tested for NORM. Any NORM found will be treated as prescribed waste, transported back to shore in accordance with the waste management manual.
Vessel collisions	Vessel impacts; injury or death; spill risk; interruption to plug and abandonment activities	<ul style="list-style-type: none"> Marine users will be informed (including Notices to Mariners) prior to commencement of the P&A activities so they will be able to plan their activities and avoid unexpected interactions. PSZ established in accordance with the OPGGS Act at least one month before start of field activities. Establishment of adequate navigation aids and communication systems. Implementation of vessel communication procedures. Relevant persons whose activities are within the activity location will be notified of activities approximately four weeks and again one week prior to commencement.
Loss of well control	Potential toxicity; oiling of fauna; reduction in visual aesthetic; socioeconomic impacts to the fishing and tourism industries	<ul style="list-style-type: none"> NOPSEMA-accepted Well Operations Management Plan prior to commencement. NOPSEMA-accepted Safety Case prior to commencement of activity. Esso-approved P&A procedures. Preventative maintenance systems in place. Well control equipment testing. Emergency response preparedness including: OPEP; Operational and Scientific Monitoring Plan; Source Control Plan; availability of suitable Mobile Offshore Drilling Unit to drill a relief well; and P&A Bridging Emergency Response Plan.



Environment that may be affected

The environment that may be affected (EMBA) is the largest spatial extent where the activities could potentially have an environmental consequence (direct or indirect impact). For this activity, the broadest extent of the EMBA is determined by a highly unlikely release of hydrocarbons from a loss of well containment. The EMBA represents the area that could be exposed to hydrocarbon, including trace concentrations of oil in the water column, as a result of activity loss of well containment from this activity.

Each spill simulation is subject to different wind and ocean currents at different times of the year. The 100 individual spill simulations for each scenario are then combined to identify the largest envelope in which a single spill could occur.

The EMBA is not representative of a single spill; an individual spill would affect a significantly smaller area. For this activity, Esso has defined the EMBA by combining the potential spatial extent of surface and in-water (dissolved and entrained) hydrocarbons, resulting from a loss of well containment.

Consultation

Esso is committed to ongoing engagement with the communities where we operate. Your functions, interests and activities may mean you, your business or your organisation are a relevant person for these activities. Your participation will help Esso to better understand the impacts and risks that may arise from the activities. As such, we're seeking your feedback as we develop the EP. Please note that your feedback and our response will be included in our EP for the proposed activities, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Please let us know if your feedback is sensitive and we will make this known to NOPSEMA upon submission of the EP in order for this information to remain confidential to NOPSEMA. Esso will communicate any material changes to the proposed activity to relevant persons as they arise.

If you would like to comment on the proposed activities outlined in this information bulletin, or would like additional information, please contact us.



How to contact us

For more information, visit our Consultation Hub using the QR Code below, or contact our Consultation team at:

T: +61 3 9261 0000

E: consultation@exxonmobil.com

W: www.exxonmobil.com.au



Scan to access the
Consultation Hub and
Esso Consultation Questionnaire

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ABN 49 000 018 566

Acknowledgement of traditional owners



Esso Australia acknowledges the Traditional Custodians of Country, the Gunaikurnai Peoples, and the land and sea upon which our operations are located.

We recognise the Gunaikurnai Peoples' continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.

Appendix F-4 GLaWAC Consultation Pack (May 2024)

21 March 2024

GLaWAC Consultation Pack

Energy lives here™

GLaWAC Representatives: [REDACTED]

Esso Representatives: [REDACTED]

Location: Teams Meeting



To be discussed

- Re-cap on previous discussion
- Previous Actions
- Q&A
- Further discussion



↓ Marine communities established on the KFB500-HLA pipeline

Previous discussion - Key points

1. General discussion about Esso's current and planned activities in Bass Strait.
2. Esso has conducted several offshore studies and public forums to collate a list of Risks and Impacts for decommissioning activities. We also utilize several other consultation methods to share information and gather feedback from a variety of stakeholders.
3. Esso would like to build a stronger partnership to understand more about cultural heritage and sea country.
4. Esso is seeking Gunaikurnai feedback on risks and impacts, including to cultural heritage and sea country.
5. Esso is seeking regular consultation on planned activities, as well as opportunities to partner, with the Gunaikurnai.

Previous discussion - Actions

1. Esso – Develop Esso key messages material for GLaWAC to refer to consultation with Gunaikurnai People - *complete*
2. Esso – Provide an update re potential environmental & GIS information that could be provided to GLaWAC – *in progress*
3. Esso / GLaWAC – Schedule initial follow-up meeting ~ March 2024 for further consultation (meeting scheduled for 21st March 2024) - *complete*
4. Esso / GLaWAC – [post March meeting] Confirm frequency of regular catchups with Esso and preferred format for consultation - *pending*
5. GLaWAC – Provide information re current Cultural Heritage survey program, and potential options for Esso support - *pending*

Q&A

1. Waste Water Treatment (GLaWAC)

a) Who is responsible for monitoring the out fall once it is treated?

Gippsland Water

b) Does it cease being ESSO's responsibility once it enters the treatment plant at Dutson Downs?

- Treatment responsibility transfers to Gippsland Water.
- There are specifications on what components / concentrations Esso are allowed to send to Dutson Downs in water for treatment to ensure it remains within the treating capacity that Gippsland Water has available.
- Waste water from the Esso facilities has been treated this way for 20+ years. And the volumes of waste water will decrease with the cease of oil production later this year.

a) Does it just become responsibility of Gippsland Water and what is the EPA's role?

Yes. Gippsland Water has to meet all regulatory requirements including with the EPA

Q&A

2. Barry's Beach Terminal [GLaWAC]

a) What is the footprint of the upgrade?

Qube are operators of the Barry Beach Marine Terminal on behalf of Esso. The upgrade is wholly within the existing site boundaries and occupies around half of the existing site.

b) Is it within the existing area or are ESSO seeking approval to extend beyond this area?

The upgrade is wholly within the existing site boundaries.



Q&A

3. Pipeline Flushing and Capping of Wells [GLaWAC]

a) We would like to understand this process better so if we can have it explained further that would be excellent. Are the pipes flushed from the platform and then disconnected?

- Pipelines are cleaned and flushed by pumping water from offshore to onshore (Longford) with cleaning pigs.
- Once cleanliness is confirmed, the pipelines are cut at the sea floor at the base of the platform to allow removal of the platform topsides and upper sections of the platform jackets pending decisions on final end states of the pipelines.

b) What is the monitoring process going to be after the well capping and who is responsible for this?

- Wells are plugged and abandoned to prevent pressure or fluid communication between distinct subsurface zones and prevent surface or sea bed releases.
- Our plug and abandonments are approved by the regulator NOPSEMA; for this reason there is no on-going monitoring of the wells required after plug and abandonment.
- For the offshore platforms environmental monitoring after the removal of the upper sections will occur for approximately 12 months after the removal, and another survey approximately 5 years later to assess how the environment has responded

Further discussion

1. Are there any other indigenous groups that Esso should be engaging with?
2. Is Esso better off leaving decommissioned infrastructure alone, or accepting a disturbance to remove it?
3. Do you have any questions on anything you've heard from other sources recently about Esso's activities?
4. Consultation alignment – does this format work for GLaWAC? Any changes?
5. Catch-up frequency?



● LOCALITY	ESSO FACILITIES	□ PLATFORM
■ STATE WATERS	--- PRIMARY PIPELINE (OIL)	○ SUBSEA FACILITY
■ COMMONWEALTH WATERS	— PRIMARY PIPELINE (GAS)	▲ VALVE SITE
■ BATHYMETRY (WATER DEPTH)	— SECONDARY PIPELINE	

↓ Locations of Esso's Bass Strait facilities



NOTE: Some changes made to improve visibility of pipelines. Facility icons do not indicate facility size.

Thank you



Appendix F-5 Additional Information



NOPSEMA

Australia's offshore
energy regulator

Consultation on offshore petroleum environment plans

Information for the community



The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is Australia's independent expert regulator for health and safety, structural and well integrity, and environmental management for offshore petroleum and greenhouse gas storage activities in Commonwealth waters.

The protection and preservation of the marine environment is best achieved when there are opportunities for the community to participate in the environmental approvals process through consultation.

Who can participate?

Under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (the regulations) there are several ways the community can participate in the environmental approvals process for offshore petroleum activities in Commonwealth waters.

Public comment for new projects and exploration activities

Offshore project proposals (OPPs) for new offshore petroleum projects and environment plans for offshore petroleum exploration activities are subject to a mandatory public comment period. Public comment must be done before the OPP or environment plan is submitted to NOPSEMA for assessment. Further information about public comment can be found at nopsema.gov.au.

Relevant persons consultation

Titleholders must consult with a specific category of people or organisations referred to as 'relevant persons' while preparing an environment plan for any offshore petroleum activity. This consultation must be done before the environment plan is submitted to NOPSEMA.

Some categories of relevant persons are specified in the regulations, such as government departments, however the information in this brochure is for the category of relevant persons who are not specified but who have 'functions, interests or activities' that may be affected by the offshore activity.

Correspondence directly to the regulator (NOPSEMA)

You can send correspondence directly to NOPSEMA; however, this generally cannot be considered until after the environment plan has been submitted. It is always better to use the public comment and relevant persons consultation processes in the first instance.

What is 'relevant persons' consultation?

Consultation on offshore petroleum activities is a two-way process where information is shared between titleholders and relevant persons. It is a requirement for titleholders when preparing an environment plan and is an important part of good environmental management.

Consultation provides an opportunity for people or organisations who may be affected by an offshore petroleum activity to raise concerns, including objections or claims, about the potential impacts of the activity, to seek information about how they may be affected, and how the titleholder intends to manage the activity to ensure the associated impacts are as low as reasonably practicable and are acceptable.

Information provided by relevant persons in consultation may also help titleholders better understand the values and sensitivities of the environment and inform the evaluation of the potential impacts and risks associated with the activity and how to manage them appropriately.

Am I a relevant person?

You may be a relevant person if you or your organisation have functions, interests, or activities that may be affected by an offshore petroleum activity proposed under an environment plan being prepared or already underway under an environment plan being revised.

The terms 'functions' 'interests' and 'activities' should be read broadly. You do not have to have a legal or financial interest that may be affected by an offshore petroleum activity to be a relevant person.

Interests that may be affected can include things like cultural and spiritual connections to the sea or interests in the protection of specific marine species. However, to be a relevant person your interests should be more than a general interest in the environment and/or offshore petroleum activities.

If I am a representative body, can I consult on behalf of all my members?

The law recognises that interests may be held communally. In some cases, all members of a community may agree that their representative body can consult on their behalf. However, this may not always be the case. Representative bodies should inform titleholders whether or not they have the authority to consult with titleholders on behalf of all their members.

Representative bodies, such as peak bodies and prescribed body corporates, may be relevant persons in their own right. They may also be an initial point of contact for titleholders to seek information about who else they should approach for consultation.

It is the titleholder's responsibility to provide all members of a community who have a shared interest opportunities to participate in consultation. In some circumstances, representative bodies may offer to assist titleholders with this.

Do I have to participate?

If you are a relevant person, you have the right to be consulted by titleholders of offshore petroleum activities when they are preparing an environment plan to submit to NOPSEMA.

Titleholders have a duty to provide you an opportunity to be consulted, however there is no obligation on you to participate in consultation. If you do not wish to be consulted, you should advise titleholders of this when they first contact you.

Titleholders must make reasonable efforts to consult with relevant persons, but the regulations do not require them to get a response to their requests. If you want to participate in consultation but need more information or time then it is best to communicate this to titleholders when they contact you. If you do not respond, they might assume you do not wish to be consulted.

If you are an organisation or representative body that is regularly approached for consultation you may consider developing guidance outlining how and when you want to be consulted. You could also consider documenting your functions, interests and activities. Both measures may help with managing regular requests for consultation.

In some instances, the likelihood of you being affected by an activity is very low and/or the impact on your functions, interests or activities may be minor. For example, if you are only going to be affected by the activity in the very unlikely event of an oil spill you may wish to inform titleholders you only want to be consulted if a spill occurs as part of the requirement for ongoing consultation set out in the regulations.



What if I want to be consulted but the titleholder hasn't contacted me?

Titleholders have a duty to identify who may be a relevant person and provide them opportunities to participate in consultation. However, even with best endeavors, titleholders may miss people or organisations who may be relevant.

If you believe you are a relevant person and you want to be consulted on offshore petroleum activities, then you should contact titleholders directly and identify yourself as a relevant person.

If a titleholder refuses to consult with you, and you believe you are a relevant person, you can write to NOPSEMA. Once an environment plan is submitted to NOPSEMA, this information can be considered in the assessment of whether or not the titleholder has met the requirements for consultation.

It is always better to attempt to resolve issues with the titleholder in the first instance. Relevant persons consultation is carried out before an environment plan is submitted, so NOPSEMA is limited in its ability to require titleholders to consult with a particular person or organisation.

What is the process for consultation?

There is no detailed process set out for how consultation should be carried out, however there are requirements that must be met under the regulations. These include:

- That you are given sufficient information to make an informed assessment about whether you are likely to be affected by the activity, how you may be affected, and to raise any concerns, including objections or claims, about the potential impacts of the activity.
- That you are given a reasonable period of time to consider the information provided to you and give feedback to the titleholder on the potential impacts of the activity on your functions, interests or activities.

What constitutes sufficient information and a reasonable period of time depends on several factors including the nature of your functions, interests and activities. You should communicate as early as possible in consultation with titleholders about what information and how much time you may need so that they can consider, respond and address these in their planning.

The information provided to you should be in a form that is appropriate and readily accessible to you. Consultation is generally a two-way process where information is shared between titleholders and relevant persons rather than a one-way process of seeking feedback to a fact sheet or high-level information.



What if I don't have the resources to participate?

If you are a relevant person and you believe you have information that is important to the understanding of the potential impacts of an offshore petroleum activity or you want to raise concerns, including objections or claims, then you should discuss with the titleholder how you can participate in consultation.

This might include requesting information in a different format, asking for more time to consider information or help to understand the information to provide an informed response.

There is no requirement in the law for titleholders to pay the costs incurred by relevant persons to be consulted, however they may choose to provide assistance to relevant persons to ensure consultation is carried out efficiently and is robust. This is a matter between the titleholder and relevant persons.

How do I make sure my views are considered?

It is important to communicate clearly when participating in consultation with titleholders. You may provide information to titleholders that helps them understand the environment and raise specific concerns, objections or claims about the potential impacts of the activity or the way the titleholder proposes to manage the activity to ensure the associated impacts are as low as reasonably practicable and are acceptable.

The information you provide to a titleholder during consultation must be considered by that titleholder and addressed in their environment plan for NOPSEMA to consider in its assessment and decision-making.

NOPSEMA publishes environment plans on its website when they are submitted for public comment, for assessment and when they are approved. Relevant persons have the right to request that the information they have provided in consultation is not published and titleholders must ensure they communicate this right to relevant persons.

Relevant persons should be aware that while you are free to respond on any matter and raise any concern, this may not be able to be considered if it is outside the scope or purpose of the environment plan and approval process. Examples of issues that may not be considered under the regulations include statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities.

Do titleholders need my consent?

Titleholders are not required by law to obtain agreement or consent from relevant persons for their offshore petroleum activities to proceed; however, they are required to demonstrate in their environment plan how the concerns, objections or claims raised by relevant persons were considered and demonstrate that their response to that information was appropriate.

NOPSEMA's assessment and decision-making will consider if titleholders have adequately demonstrated in the environment plan that genuine consultation has taken place with relevant persons in accordance with regulations.

Do I need to respond to a request for consultation?

There is no obligation for relevant persons to respond to a request for consultation from a titleholder. However, if you are provided an opportunity to participate in consultation and you do not want to be consulted, or you only want to be consulted on specific offshore petroleum activities or environmental matters, then it is best that you communicate this to titleholders as soon as they contact you. If you do not respond to requests for consultation, titleholders may make many repeated attempts to contact you.

NOPSEMA can help you understand the requirements for consultation and how to effectively participate in the process. Please contact communications@nopsema.gov.au for assistance.



NOPSEMA

Australia's offshore
energy regulator

Further information

For further information visit nopsema.gov.au or
contact communications@nopsema.gov.au.

Key legislation

Offshore Petroleum and Greenhouse Gas
Storage Act 2006
Offshore Petroleum and Greenhouse Gas
Storage (Environment) Regulations 2023
Environment Protection and Biodiversity
Conservation Act 1999.

Contact details

p: +61 (08) 6188 8700

e: communications@nopsema.gov.au

Head office: Level 10, Alluvion Building
58 Mounts Bay Road, Perth WA 6000

Postal: GPO Box 2568 - Level 10 58 Mounts
Bay Road, Perth WA 6000

nopsema.gov.au

National Offshore Petroleum Safety and Environmental
Management Authority (NOPSEMA)

ABN 22 385 178 289

Published May 2023



How to contact us

For more information, visit our Consultation Hub using the QR Code below, or contact our Consultation team at:

T: +61 3 9261 0000

E: consultation@exxonmobil.com

W: www.exxonmobil.com.au



Scan to access the
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Esso Consultation Questionnaire

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Acknowledgement of traditional owners



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We recognise the Gunaikurnai Peoples' continuing connection to land, sea, culture and community, and pay our respects to Elders past and present.



CONSULTATION

Gippsland Basin Activities

February 2024

Key Messages

Esso wishes to build relationships with stakeholders based on open, accurate and transparent consultation, where information can be shared with each other about our interests and activities. By working together, we will better understand each other's needs and how opportunities for community can be supported.

Esso's assets in the Bass Strait consist of 421 wells, 19 platforms, six subsea facilities and more than 800 kilometres of subsea pipeline. After delivering energy for more than 50 years to Australia, some of the facilities, consisting of 10 platforms, four of the subsea facilities, associated pipelines and approximately half of all wells, no longer produce oil and gas. An additional three platforms and associated pipelines are anticipated to stop supporting oil and gas production by 2025.

Esso will continue to produce gas in Bass Strait into the next decade. However, oil will no longer be produced in Bass Strait after 2024. All wells will be plugged and abandoned by installing cement plugs and all pipelines will be flushed and cleaned to remove remaining oil. Esso's oil producing platforms will be decommissioned starting no later than 30th September 2027, followed by pipelines and other subsea infrastructure.

Climate change is one of the major problems facing the world today. To help reduce our carbon dioxide (CO₂) from Bass Strait operations, Esso is seeking to develop the South East Australia Carbon Capture and Storage (SEA CCS) Project, which could start capturing and permanently storing CO₂ as early as 2026. We are also exploring opportunities to offer this service to businesses interested in accessing the SEA CCS facilities to reduce emissions from their operations.

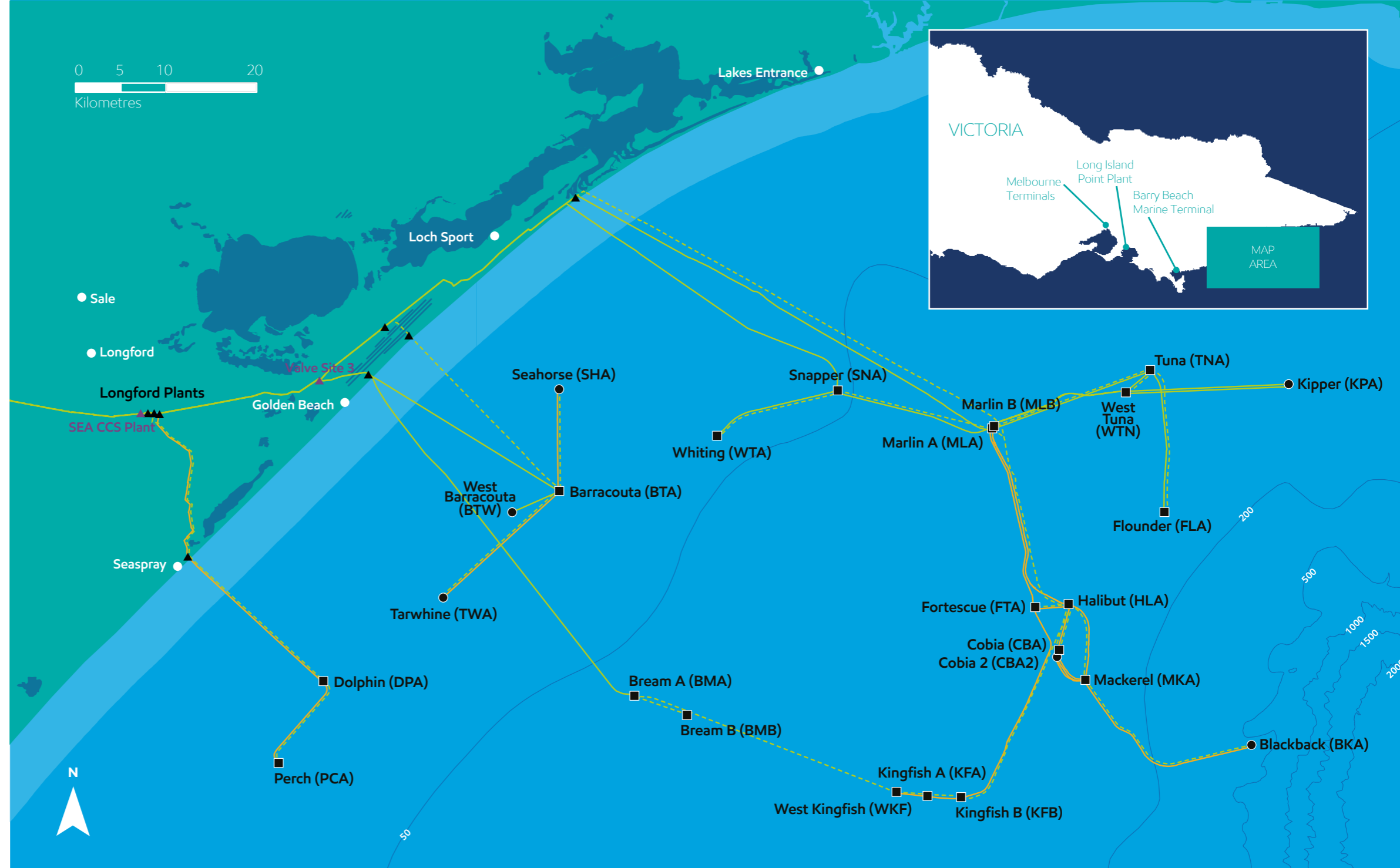
Esso's activities may affect the environment and other values, including sea country and cultural heritage. As well as inviting community to join in our regular consultation activities, Esso would also like to welcome indigenous feedback about areas that may be sensitive to Esso's activities and how cultural values and heritage are considered in Esso's activity plans.

Consultation

Esso is committed to ongoing engagement with the communities where we operate. Your functions, interests and activities may mean you, your business or your organisation are a relevant person for these activities.

Your participation will help Esso to better understand the impacts and risks that may arise from proposed activities.

As information bulletins are made available we would very much appreciate your feedback on the proposed activity outlined in each bulletin.



- LOCALITY
- PLATFORM
- - - PRIMARY PIPELINE (OIL)
- PRIMARY PIPELINE (GAS)
- SECONDARY PIPELINE
- SUBSEA FACILITY
- ▲ VALVE SITE
- STATE WATERS
- COMMONWEALTH WATERS
- BATHYMETRY (WATER DEPTH)
- SEA CCS FACILITY

PROPOSED ACTIVITY	CONSULTATION STATUS
Kipper - Subsea Drilling	Closes April 2024
Turrum Phase 3 Drilling (From Marlin B)	Closes April 2024
Geotechnical and Geophysical (5 yearly revision)	Closes April 2024
Decommissioning Steel Piled Jackets - Execution	Closes Fourth Quarter 2024
Decommissioning Pipelines	Closes Fourth Quarter 2025
South East Australia Carbon Capture and Storage Project	Ongoing
Decommissioning Steel Piled Jackets - End State	Closed (Environment Plan submitted March 2024)
Jack-Up Rig Well Plug and Abandonment	Closed (Environment Plan under assessment)
Bass Strait State Waters Environment Plan	Closed (Environment Plan under assessment)
Gudgeon-1 and Terakihi-1: Exploration Well Plug & Abandonment	Closed (Environment Plan has been accepted)

NOTE: Some changes made to improve visibility of pipelines. Facility icons do not indicate facility size.

All dates current at time of publishing.



Esso Consultation Questi
Jun 1, 2023 – Jun 1, 2024
#EssoConsultation_001



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Which of the following Esso activities would you like to be consulted on: *

3/10

Esso seeks to provide relevant persons with sufficient information to allow them to make an informed assessment of proposed activities.



Decommissioning - Steel Piled Jackets (SPJ) EP



Kipper Subsea Drilling EP



Turrum Phase 3 Drilling EP



Geotechnical & Geophysical EP



Jack Up Rig Plug and Abandonment EP



South East Australia Carbon Capture and Storage (SEA CCS)



Decommissioning - Pipelines

Appendix G: Advertisement materials

Appendix G-1 April 2023 newspaper advertisements

THUMBS UP / THUMBS DOWN



THUMBS UP: To the lovely English girl, Beth, who stopped to help me collect my dropped shopping when the Coles bag broke.

THUMBS UP: To the excellent nurses and doctors at the Bairnsdale hospital who on a very busy morning went above and beyond to rehydrate me in the waiting room thank you.

THUMBS UP: To the Lindenow Pub. Excellent food and service, the pot and parma was great and don't lose the young waiter who never stopped all night.

THUMBS UP: To the person who handed my lost hearing aid into the Paynesville Op Shop.

THUMBS UP: To the wonderful person who found a wandering dog who had escaped. You made a 92-year-old man extremely happy.

If submitting a Thumbs Up/Down

All items submitted for consideration for publication in Thumbs Up, Thumbs Down, must be signed and include the address and telephone number of the writer. (This information is not for publication but is required under the Newspaper Act.) Items should be limited to 30 words, and writers should note that due to the numbers received, only a selection can be published. No specific business names will be mentioned in Thumbs Up/Thumbs Down. Write to 'Tom', c/- 'The News'

Submit your thumbs up or thumbs down
thumbs@eastvicmedia.com.au or online at
www.bairnsdaleadvertiser.com.au



Gippsland Lakes Complete Health population health and wellbeing worker Tehseen Zafar (left) with Gippsland Grammar's Bairnsdale Head of Junior School, Virginia Evans, and staff member Stacey Ashley recently.

Students reject vapes for healthy life

Parents and school communities have become more aware of the chemical cocktail in vaping products and have expressed shock at the level of misinformation about nicotine in vapes.

Bairnsdale's Gippsland Grammar school community says it is now more keen than ever to protect school-aged children from vaping harms after a recent series of workshops presented by Gippsland Lakes Complete Health (GLCH) population health and wellbeing worker Tehseen Zafar, with staff, parents and senior students.

After the workshops, the students were firmly against vaping and e-cigarettes, saying they would rather stay healthy and play sport.

They developed a series of creative social media hashtags that included #sayyestogoodhealth and #eatfruitsdontinhalethem and commitment cards explaining why they reject vaping.

One student said he wanted to "achieve my dream of becoming the best guitarist of all time", while another said they wanted to make their "dreams come true".

Another recognised that: "Vaping is bad for my health, both mentally and physically, and it can affect other people too".

Speaking to parents and staff, Tehseen urged parents to build trust by talking constructively about vaping harms and show genuine concern for their children's health.

"We need education and strict regulations against vaping to put the health of our young adults and community first," he said.

"The tobacco industry is trying desperately to keep its profits by hooking a whole new generation on e-cigarettes and it is adopting

predatory marketing tactics to do this.

"Nicotine is highly addictive and toxic and has the potential to cause poisoning if swallowed, inhaled or absorbed through the skin."

Gippsland Grammar's Head of Junior School, Bairnsdale, Virginia Evans, said students learned vaping was worth avoiding so they could lead healthy, active lives.

"Our students particularly loved how Tehseen engaged them in their learning," Mrs Evans said.

"The sessions have promoted awareness and understanding in our Gippsland Grammar community and we are grateful for the opportunity."

Vapes contain a combination of up to 250 chemicals including formaldehyde and some heavy metals that irritate the throat, coat the lungs and may lead to illnesses such as cancer and heart disease.

Even though it is illegal for under 18s to buy vapes, the tobacco industry specifically targets young people on social media. Evidence also suggests that young people who use vapes are more likely to smoke cigarettes.



LAKES ENTRANCE SECONDARY COLLEGE

Grade 5 & 6 Information Evening

Tuesday 2nd May 2023
5 pm-7 pm

Starting in the library with a presentation, followed by tours lead by students

Lakes Entrance Secondary College invites families to an information evening at the college. Explore the campus, including the new Year 7 Hub. Meet staff and speak to current students.

For any queries please contact the General Office 5155 2982 or email lakes.entrance.sc@education.vic.gov.au

EN12580

Progress update on Esso's Bass Strait offshore facilities

Community Consultation Session

Esso actively engages with relevant people across the Gippsland region and consults them as we work through our offshore activities. This ongoing communication has played an essential role in how we align our approach and ensures the community's needs and expectations around this work are understood.

If you would like to learn more about our upcoming offshore activities including Decommissioning, Carbon Capture and Storage, Jack Up Rig activities and the Bass Strait State Waters Environment Plan, we invite you to come along to our community information session.

Drop-in to the Bellevue on the Lakes (201 Esplanade, Lakes Entrance) at any time between 5.30pm and 6.30pm on Tuesday 18 April 2023. Please register your interest in attending at consultation@exxonmobil.com by Friday 14 April 2023.

If you cannot attend this session, you can always contact us at consultation@exxonmobil.com.



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Dead air despite \$2.7m webcam spend

EXCLUSIVE
Mitch Clarke

The Andrews government has taken more than two years and spent in excess of \$2.7m to install simple webcams and technology so that TAC workers can access meetings offsite.

Victorian taxpayers have been forced to stump up an extra \$1m after the upgrade, to hold online meetings at the TAC's Geelong site, blew out.

Despite the Zoom boom having come and gone, the taxpayer-funded project at the Transport Accident Commission's Brougham St facility is not due to be finished until the end of this month.

It was initially due to cost \$1.6m and scheduled to be finished on December 31, 2020.

But tender documents seen by the Herald Sun have exposed the bungled project, which the government claimed was halted partly due to issues with a subcontractor's vaccination status. According to the

documents, the TAC appointed an audio visual specialist to install and upgrade technology in 39 meeting rooms.

This was to meet the "contemporary business needs of staff so they are able to present digital content from their device to other meeting participants and run web conferences with external parties".

The project required interactive hardware and collaboration software to be purchased and installed. Training for all staff was also included.

The TAC said the project ensured the organisation was able to connect and collaborate with external partners, suppliers and other organisations using similar platforms.

The state Opposition has slammed the management of the project, arguing it is unacceptable for it to take three years to hook up TVs and cameras to hold Zoom meetings.

Opposition spokeswoman for WorkCover and the TAC, Ann-Marie Hermans, said:

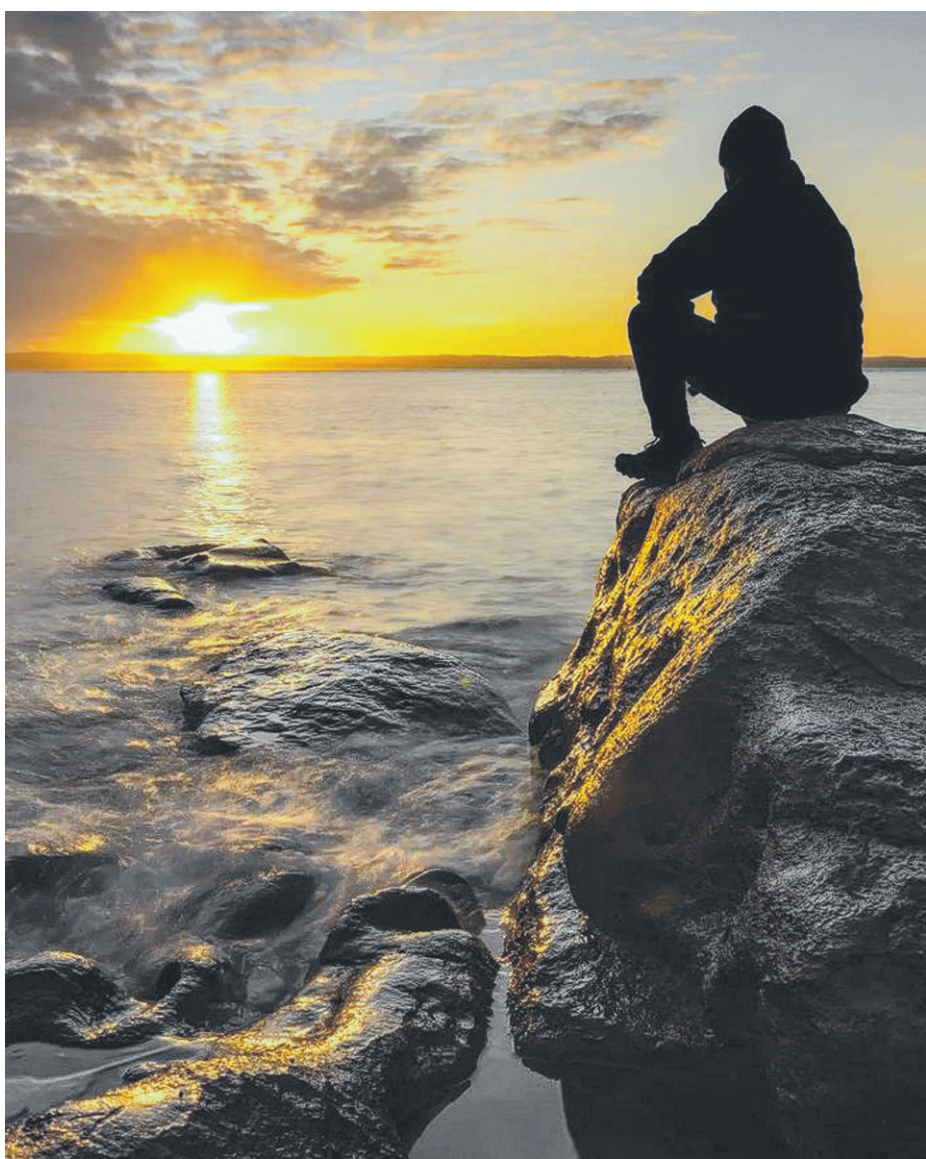
"The government needs to explain how a simple audio visual upgrade can possibly cost nearly three million dollars and be almost two and a half years behind schedule.

"While Victorians face unprecedented cost-of-living pressures, the Andrews Labor government has blown more taxpayers' money upgrading basic office equipment at the TAC. This is another example of an incompetent government that simply can't manage money. Every dollar Labor wastes is another dollar Victorians will pay for in higher taxes or reduced services."

The TAC blamed the blow-out on increases to building costs, the impacts of Covid, general supply challenges and site attendance delays.

Costs were also increased due to the need to include a hearing augmentation service to ensure the organisation falls in line with the Disability Discrimination Act.

mitch.clarke@news.com.au



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Picture: PETE FOGARTY



Let's go to the Dawn Service

Free buses will run between the following RSLs and suburbs to the Shrine of Remembrance for the Dawn Service on Tuesday 25 April.

The buses will arrive at the Shrine by 5.45am and depart the Shrine at 7.30am, 7.45am and 8am and return to your pick up location.

Bookings are essential and close 2pm, Monday 24 April 2023.

Ashburton	Balwyn	Balwyn North	Blackburn
Box Hill	Camberwell	Chadstone	Clayton
Coburg	Croydon	Dandenong	Doncaster
Essendon Football Ground (Windy Hill)			Greensborough
Kew	Mitcham	Mordialloc	Mentone
Noble Park	Oakleigh	Reservoir	Ringwood East
Sandringham	Scoresby	Springvale	Templestowe
Thomastown	Victoria Park (Jock McHale Stadium)		Wantirna
Watsonia	West Heidelberg	Williamstown	Yarraville

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Progress update on Esso's Bass Strait offshore facilities

Community Consultation Session

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Garden club's beautiful show bench entries



Elaine Dobbin won the beginner's luck section at the Lakes Entrance Garden Club March meeting. (PS)



Best exhibit was the multi coloured dahlia from Dearne Albert. (PS)

Sixty members and visitors of Lakes Entrance Garden Club came to the March meeting on a lovely sunny day – a great turn up once again.

The Bushfire Recovery Program has seen thousands of plants propagated, grown on and delivered to many of the bushfire-affected areas of East Gippsland since the 2019/20 fires. Plants, fertilizer and mulch have been delivered to Wairewa and Clifton Creek in the last few days and next week more plants will go to Sarsfield.

President Stan Barker thanked everyone for such a great show bench, and the two main businesses that support the club every month - The Yellow Door nursery and Forget Me Not Florist.

Judge for March was Elise Walker and the show bench was full of beautiful entries.

Show bench steward Susie Swann gave a commentary on all the different sections while members were pleased to see an entry in the beginner's luck section – this is especially for those who have never entered on the show bench and it can be any type of flower or potted plant from your garden.

And what an eye-catching entry it was – an orchid with a long spike of six pristine white flowers from Elaine Dobbin.

A special section in March was the three flowers of one colour and Ann Barker won with red gum, lycoris and dahlia. Second was Dearne Albert with white dahlia, gardenia and Japanese anemone.

Container of flowers is a section where you can really make a colourful display. First was Shirley Bardwell with a basket all purple and white. Equal second went to Dearne Albert with white and pink dahlia and Ann Barker

all pink, white and mauve. Truus Adams' entry was also bright with a burst of orange hibiscus set off with dark green foliage.

The March potted plant section was for foliage plants only and first went to Sheryl MacCubbin with equal second to Joy Davenport and Shirley Bardwell. There was a fun entry from Dearne Albert of a mini toilet with a furry cactus growing out of it. The toilet flushed too.

There was only one entry in the druit section – a bowl of lovely passionfruit won for Bev Bucknall.

Then came the vegetables – lots of them. First in the above ground section was Dearne Albert with a basket containing eggplant, tomatoes, beans and silverbeet. Equal second went to Sheryl MacCubbin with a ripe butter-nut pumpkin and Ian and Ollie Wilcox with a bowl full of chillies.

There were two entries in the vegetables below ground section and first was Ian Bucknall with delightful parsnips and round beetroot. Second was Dearne Albert with potatoes and a great carrot – all of these so good to roast.

Floral art had four entries with first going to Shirley Bardwell for her white tiny daisies, white dahlia and a splash of gold set off with dark green foliage.

Equal second went to Ann Barker with a simple entry of lemon dahlia surrounded with fern leaves, and Dearne Albert with a floral Easter bonnet (hat) complete with a bunny on a bike.

The fourth entry from Truus Adams was lovely and imaginative with bent leaves and flowers of gold, white and red.

Best exhibit was the multi coloured dahlia from Dearne Albert.

Guest speaker was Mike Ryan, proud resident of Nowa Nowa.

He moved to Nowa Nowa 27 years ago, bought the café and caravan park, named it Mingling Waters, and raised his family in this idyllic place.

The town offers a great lifestyle for the young people and families who are now moving into the area. In the lake just behind the caravan park, (officially the Nowa Nowa Arm of Lake Tyers) the water is quite warm. Thermal spring water bubbles out of the lake at 44 degrees, then mixes with the water from the creek and lake.

The water has a naturally high salt content and this makes it great to swim in.

The lake is an ever-changing landscape and always beautiful. There is often a noticeable sulphur smell from the bubbles coming up through the water.

Mike leased the café and caravan park to new people now and it will become an eco retreat with glamping tents and group accommodation.

The next Lakes Entrance Garden Club meeting is Monday, April 17, 1.30pm Mechanics Hall, (near the library) Mechanics Street, Lakes Entrance. Visitors are always welcome.



Entries in the floral art section. (PS)



The container of flowers section is always popular. (PS)

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Community to support 'Walk With Chop'

THE Moe community will gather this Sunday to honour the legacy of the late Riley Pearce.

A walk/run has been organised by the Pearce/Walsh family and Mindfull Aus.

Riley 'Choppy' Pearce courageously battled with mental health illness for some time. Choppy's determination and courage throughout his battle and his lived experience of this illness, allowed him to help and assist others in their own battle with mental health. Choppy was a vivid mental health campaigner and the legacy he has left behind was evident when many family, friends, and the wider community came together to farewell Choppy, and share their stories, after he tragically took his own life in January 2021, aged 17.

The devastating effect of Choppy's death was felt across the whole community, and it was at this horrific time all came to know just how many people Choppy supported through their dark times, as many came forward about their own struggles with mental illness.

The inaugural 'Walk With Chop' fundraiser has been arranged to not only honour Choppy, but to assist Mindfull Aus in continuing to empower the youth of today so they can enjoy a better tomorrow.

"Choppy, we miss you dearly, and as much as it hurts us all to know the pain you must have been suffering, your legacy is our strength, and we will endeavour to honour this forever. We love ya mate," the Pearce family said.

All participants of the walk must register (\$25) and will receive their custom Walk With Chop event T-Shirt from the Mindfull Aus Booth on the day and get their own fundraising page.



Never forgotten: Moe footballers wearing special t-shirts in memory of Riley 'Choppy' Pearce before their match against Traralgon last year. File photograph

You can register using this link: walkwithchop.gofundraise.com.au/cms/home

Participants will not be able to take place without registration on the day.

The walk/run commences from 9.30am at Moe Botanical Gardens this Sunday (April 16).

The walk is six kilometres and the run 14km.

A barbecue and coffee van will be there on the day.

Live music by Mat 'Tezmo' Howlett Music.

Raffle tickets will be available for purchase on the day. This will be drawn on Saturday, May 13 at the Moe versus Traralgon Mindfull Aus Mental Health Round in the Gippsland League.

Refreshments will also be available at the Moe Tennis Club following the event.

If you or your business would like to support the event, email Mindfull Aus via admin@mindfullaus.org.

If you or someone you know is suffering, phone Beyond Blue on 1300 224 636, or Lifeline on 13 11 14.

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GP1656247

Final farewell for Connection

By ZAIDA GLIBANOVIC

TO the sorrow of the community, the beloved *Yallourn North Connection* newsletter released its final farewell edition last month.

The Connection became a paper synonymous with Yallourn North, which celebrated the township and facilitated community participation.

In its 52 editions since 2017, the Yallourn North paper covered everything concerning the community from sporting wins to record-breaking Christmas light displays.

Anthony Wasiukiewicz, the Editor and the mastermind behind the publication, started the paper out of a "necessity" to keep the community up to date.

"I was doing a lot of community work at the time, you get to chat with a lot of people and there was a little bit of frustration where you'd have an event or some sort of gathering or ANZAC day ... but people would find out after the fact," he said.

When asked why he loves Yallourn North so much, Mr Wasiukiewicz said: "I can see the potential, I grew up during the power station privatisation era so everything was cut back and when I finished school I couldn't wait to see the tail end of the place."

Having come back to Yallourn North about 12 years ago, Mr Wasiukiewicz saw a positive change with new developments and lovely people, and wanted to celebrate that change as he says Yallourn North often undersells itself. Mr Wasiukiewicz is known to many not only in Yallourn North but across the Valley for his community work and volunteering.

The whole Wasiukiewicz family has contributed to Yallourn North for decades. Ever since the family emigrated to Yallourn North from Eastern Europe in the '40s they have helped volunteer and fundraise for the community. As a little boy, Mr Wasiukiewicz was forced by his parents to mow the lawns for the Yallourn North Lions Club, and from then on has never stopped giving to the

community. On any odd day when he's not working as a handyman, you will catch Mr Wasiukiewicz walking along the roads of the town collecting litter. As he says "somebody has got to do it."

But one man can't do it all.

"Over the last few years things have been fairly hectic... I've done the community volunteering thing for about 12 years so I've been heavily involved and I'm just at a stage where something needs to be pulled back and you know the Connection is such a big undertaking," he said.

"There are sort of mixed feelings like there's almost a little bit of relief that I have a bit more free time ... but also a sadness because I just got so much support."

The Yallourn North Connection has become quite the operation, starting with only Mr Wasiukiewicz, who would source the information, write the newsletter, find somewhere to print it and deliver it himself with the help of his mother Teresa.

The newsletter grew rapidly with delivery to nearby towns. The connection had over 20 deliverers, with contributed articles from across the Valley and many local business advertisements.

In the farewell edition of the Connection, Mr Wasiukiewicz thanked all those that helped him publish the newsletter.

"If it wasn't for all the positive feedback that has been received over the years I would have given up long ago," he said.

While Mr Wasiukiewicz is taking a well-deserved break from the Connection, he hopes to release a Christmas edition to commemorate the light displays that Yallourn North is known for.

The Yallourn North Connection will be dearly missed by all.

If you would still like to keep up to date with the Yallourn North community, head to facebook.com/yallournnorthvic/

The Yallourn North Facebook page is run by Mr Wasiukiewicz. The page continues to act as a community noticeboard.

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GP1655285

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PROGRAM

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- 5.30pm & 6.30pm Student Lead Tours

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GP1656248

Hands off Bass Coast farming: DAL panel told

TYPICALLY, a medium-sized, three-bay hay shed is about 100sqM in size.

If you're a farmer in the Bass Hills and some other parts of the Bass Coast Shire, and you want to build anything bigger than that, you'll need a permit from the shire.

That's if the Draft Statement of Planning Policy (SPP) put out under the controversial Bass Coast Distinctive Area and Landscape (DAL) process stays as is.

Again, typically, a shed like that would be under 5 metres in height, but if you wanted to build a 6-metre-high machinery shed, for example, you'd need a permit.

If you own an undulating to hilly farm in the Bass Hills, Bass River Valley and coastal plains in the western part of the shire, and the shed you need is going to be sited more than 200 metres above sea level, you'll need a permit.

If you want to build a fence, any height, excluding a post and rail fence up to 1.8 metres, you'll need a permit.

A permit is required to remove native vegetation and tree belts, to use building materials and colours not included on the list and to site farm sheds in certain locations.

In short, the draft SPP being proposed by the State Government is a potential nightmare of red tape for affected farmers, but without any support from government coming back the other way in its distinctive areas plan.

And the Victorian Farmers Federation has seen red.

As well as a formal submission, back in April 2022, by VFF President Emma Germano, a VFF representative from head office, senior policy advisor Lisa Gervasoni and Bass stud breeder, Faye Tuchtan, representing the Bass Coast VFF Branch, appeared at a hearing into the DAL on Thursday, March 30.

Each was scathing in their assessment of the Draft Statement of Planning Policy with Ms Gervasoni providing the following recommendation on behalf of members:

"If a statement of planning of



Bass farmer Faye Tuchtan systematically dismantled the proposed planning controls on farming in the Bass Hills, including fences, farm sheds and tree removal, at the Distinctive Area and Landscape (DAL) public hearings last week.

policy is to be progressed, it is critical that it be revised to ensure that it supports state planning and agriculture policy. Landscape controls should then be developed to support the ability of agriculture to grow and implement climate resilient production systems," Ms Gervasoni said on behalf of the VFF.

"If the statement progresses without including a fulsome consideration of the requirements of s46AP (1)(d) (including productive farm land as significant) we request that the Panel recommends that specific landscape and other controls are not implemented on agricultural land."

It's a clear, simple message from the VFF – hands off our farms.

The draft SSP does say:

"A key aspect of the proposed SLO is to balance the need to protect the significant landscapes with ensuring the continuation of

agricultural uses: the draft Bass Coast SPP supports the protection and continued use of agricultural land and recognises agriculture as important to the local economy."

But there's precious little practical support and no research of the sector locally.

The Strategic Agricultural Land Project that became Protecting Melbourne's Green Wedges and Agricultural land study were projects undertaken on behalf of the Minister for Planning. They were based on a view that all agricultural land within 100km of Melbourne is strategic agricultural land that must be protected.

Unless the government is prepared to carry out a proper assessment of agriculture in Bass Coast, they say, as part of its Distinctive Areas and Landscapes (DAL) process, the Victorian Farmers Federation is calling on the panel to recommend no changes

impacting farming in the shire.

Ms Tuchtan made a compelling submission as a commercial farmer operating in the area.

"We note that the focus of the SPP for the Distinctive Areas and Landscapes appears to be on settlement boundaries and landscape at the exclusion of agriculture."

"But the Regional Growth Plan for Gippsland (page 27) states that protecting and maintaining Gippsland's strategic and productive agricultural land is essential for the continued growth of the food manufacturing sector."

Ms Tuchtan said there was no meaningful consideration of the importance of agriculture in the Bass Coast DAL process.

"We consider that an essential part of the landscape in rural areas is the farmscape, whether it be dairying, livestock, viticulture, cropping or horticulture. Therefore, part of the rural outlook is

the vista of farm sheds, silos and stockyards," she said.

"As well as tourism, agriculture is an essential part of Bass Coast Shire. The current agricultural strategy for Victoria recognises Victorian agriculture is a cornerstone of our economy. Victoria's farmers, agribusiness and surrounding communities are an integral part of our way of life. They feed us, clothe us, and export our products to the world. Agriculture creates essential jobs in our regions and supports the productive management of our landscapes".

"Upon reading the SPP, I wonder whether the authors have visited the region – they state that Grantville has a police station, a school and a supermarket – in fact, Grantville has none of these!"

The proposals in the SPP appear to take control over our agriculture and agricultural land. This must not happen, farmers must be able to run their business in the best way they can," said Ms Tuchtan, calling the proposed controls a "complete overkill", bringing with them large costs associated with planning applications and compliance.

"I question where the idea of only post and rail fences came from – do we actually have enough timber or money to install rail fences? While we wait for a planning permit to be approved for a post and wire fence, stock will be out on the road."

"Farmers are best to look after all farm fencing – new, upgrades, repairs. They have been doing this since settlement without any restrictions or regulations or input by any government or quasi-regulators."

Ms Tuchtan continued on systematically taking apart every aspect of the DAL and SPP as it proposed place extra burdens on farming.

You can't help thinking, however that the proposed regulations are something of a blueprint for a new attitude to planning rules governing farming.

(Read the full text of Faye Tuchtan's submission online at sgst.com.au).



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Indigenous social worker flips on adoption

EXCLUSIVE

ELLIE DUDLEY
LEGAL AFFAIRS
CORRESPONDENT

An Indigenous social worker, who initially staunchly opposed the adoption of Aboriginal children, has made a sensational backflip to support the adoption of an Indigenous teenager by his white foster parents.

The social worker said while he once thought it was an "automatic

no" because of the impact of the Stolen Generations, it was in the teenager's "best interests" to be adopted.

Mervyn Taylor, managing director of Ngadhi Family Services, wrote a letter to the Department of Communities and Justice supporting the adoption of Indigenous teenager Richard.

"You know, when I first read your email I thought adoption would be an automatic no because of my people's history of the stolen generation," Mr Taylor said.

"But I reflected on the infor-

mation by unpacking it and also spoke to another highly respected Aboriginal elder ... about this consult. After much reflection I could not only hear Richard's voice but also became aware of the commitment and connection between Richard and his carers."

Richard, 18, whose name has been anonymised by order of the courts, has requested the NSW Supreme Court allow him to be adopted by his foster parents, who have cared for him since he was two.

Asked by The Australian why he initially opposed Richard's

adoption, Mr Taylor said: "I opposed because culturally it's just not acceptable."

"When I hear adoption, straight away there's a fear that's there. I've grown up in an Aboriginal community so I understand the significance of adoption from community's eyes," he said.

"But with this boy, there was information that he was well-adjusted, he was thriving and identified as a proud Aboriginal. I'm going to support it."

Mr Taylor's comments put him at odds with Indigenous child pro-

tection groups such as SNAICC National Voice for our Children and AbSec, which do not support the adoption of Aboriginal children in any circumstances, due to generational trauma instigated by the Stolen Generations.

SNAICC CEO Catherine Liddle said "removing our children from family, culture and community perpetrates trauma." "There is a wealth of evidence that shows the importance of maintaining these connections for Aboriginal and Torres Strait Islander children to thrive," Ms Liddle said.

AbSec CEO John Leha said Indigenous children should never be adopted, but instead be allowed to "connect with their culture on their country" by being placed with family members or kin.

"It's about ensuring that those young people are strong with a cultural identity," he said.

"The system should allow for Aboriginal children to connect with their culture on their country as a means to discover their heritage and to know about their whole family their whole lives and their connection to it."

As part of his bid to be adopted, Richard has written to presiding judge James Stevenson saying he felt Indigenous heritage was standing in the way of his adoption.

Laws governing adoption in Australia require, as a first preference, an Aboriginal child to be adopted by someone in the Aboriginal community to which their birth parent belongs.

If not practicable, the child can be placed with an adoptive parent from another Aboriginal community.

Only if that is not feasible may the child be adopted by non-Aboriginal parents.

Richard's mother, Jane, opposes the adoption, telling the court "adoption is alien" to Indigenous Australians' way of life.

Retired child psychiatrist David Mushin, who used to work with the Victorian Aboriginal Childcare Agency and within the Department of Community Services, said he repeatedly saw "issues of identity" arise when Aboriginal children were adopted by non-Aboriginal families.

Ley confronts Libs' task in Mackellar

MAX MADDISON
NSW POLITICAL
CORRESPONDENT

There's a recurrent theme as Liberal deputy leader Sussan Ley pops into local businesses along a bustling afternoon Pittwater Road, on Sydney's northern beaches.

Cafes, pharmacies, a Lifeline store and a cattery; the message seems to be the same.

Inflation and interest rates are hurting almost everyone, as Janine, one of the part-time workers at Lifeline, says: "Albanese could put his hand in his pocket and give us some more money."

And while there's a steep hill to climb, within this you can begin to see the framework of the terms in which the Liberal Party will engage the government at the next election.

"I want us to demonstrate to small businesses that we actually have policies and economic settings and plans that they can respond to, that support them, that don't make life harder for them," Ms Ley tells The Australian.

"So as I said to someone just now, we have work to do ... we didn't meet people's expectations at the last election."

It's day two of Ms Ley's nationwide, 16-day, 16-seat "pre-budget blitz", and she's found herself in the seat of Mackellar. Once considered Liberal heartland, the seat is now representative of the tall order facing the Coalition if they are to return to government.

Around the corner, Veronica Ciappi Wolf – the owner of Cake Me Up, established during the pandemic – tells Ms Ley she is not sure how much longer she can survive amid inflationary pressures pushing up input costs and exorbitant Sydney rental prices.

"I'm still here but I'm not sure for how long," she says.

Ms Ley says the economic pressures are evident everywhere she goes, noting energy prices and labour shortages as two of the main concerns, and the picture is



Deputy Liberal leader Sussan Ley on her tour of teal-held Mackellar

"quite bleak". "It's harder now than it was even a few weeks ago. And I've spoken to businesses that have said they haven't had anyone walk in the door all day. I have spoken to businesses whose leases are up in a few months and they're not renewing them," she says.

Despite the stiff economic headwinds battering businesses, Ms Ley has no illusions about the electoral equation facing the party. "The road back to government is through every single one of the states we lost, including the teal seats," she says.

Changing demographics and the unpopularity of former prime minister Scott Morrison saw the party lose Mackellar to teal independent Sophie Scamps at the 2022 federal election.

While Mr Morrison has moved to the backbench, the party has considerable work to do to recover the nation's trust.

It's been a big day for the deputy Liberal leader in Sydney's affluent, teal-won north shore: street walks in the ritzy suburb of Rossmore, conversations with environmental groups and a meeting with a Moss Vale real estate agency.

With two weeks left of her policy development trip, Ms Ley is likely to encounter considerably more hardship. The question remains as to whether the Liberal Party will be able to capitalise on the approaching storm.



Sue McLean Bolter, with her children visit her mother Moira McLean at the Wesley Mission facility in Narrabeen

Aged rules 'to set off collapses'

Continued from Page 1

these reforms but we can't just pluck these people out of thin air," she said.

Aged Care Minister Anika Wells said the government would not force the closure of facilities that were unable to meet nursing targets and would work with providers to help them meet new standards. Last month, Ms Wells conceded about one in 20 aged care homes would not meet Labor's July 1 deadline, but said about 80 per cent had already achieved the target.

Ms Wells said the "vast majority" of residential facilities would meet 24/7 nursing requirements and that around the clock nursing was needed to properly care for some of the nation's most vulnerable. Exemptions would be

available for a small number of facilities in regional and remote areas if they were unable to fulfil the requirements.

Opposition aged care spokeswoman Anne Ruston attacked Labor for failing to consider the challenging circumstances the sector faced due to severe workforce shortages "in their rush to tick and flick election commitments" after the Prime Minister promised to "fix the crisis in aged care".

Senator Ruston seized on the closure of Wesley Mission's homes, arguing residential facilities were not adequately supported during the transitional period.

Sue McLean Bolter, whose 98-year-old mother Moira McLean has been a resident of the Wesley Mission home in Narrabeen since 2019, was first

informed of the provider's closure on Tuesday.

She has been scrambling to find suitable accommodation for her mother, having recently flown in from the US to celebrate Ms McLean's birthday. So far she has been unsuccessful.

"It's been very stressful ... it's just been horrible ... my sister who lives here has been furious," Ms McLean Bolter said.

"Had (Wesley) even notified the government that they had been planning to close and why were we given just six weeks notice?"

"This is the northern beaches where people have their families, doctors and hospitals so to send them over to the other side of Sydney is almost unthinkable. You can't just drop by to meet your mum, you might have to

drive two hours across Sydney in traffic."

Wesley Mission chief executive Reverend Stu Cameron said Labor's new national staffing requirements had created challenges for the home as a smaller provider. "The aged care sector is experiencing challenges to workforce and flow-on impacts from the national reforms to aged care," Reverend Cameron said.

"Wesley Mission supports these once-in-a-generation reforms, improving quality for all care users. It is, however, a challenging environment to be a smaller provider."

Aged care provider Whiddon chief executive Chris Marelis said the Wesley closure was "unsurprising" given the financial pressures many providers were under and forecast more failures.

Progress update on Esso's Bass Strait offshore facilities

Community Consultation Session

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CEOs sleep out for homeless

JOANNA PANAGOPOULOS

CEOs have been tucking into sleeping bags on the cold, hard cement of Sydney's CBD for 18 years to experience one night of homelessness, but it's bitter-sweet the event is still so successful, the Vinnies' CEO Sleepout founder says.

"It's both good and bad (that the event is still going). I mean, obviously the need is still there. Critics will say, haven't you fixed homelessness yet," Bernard Fehon, a CEO, said.

Two decades later, amid a cost-of-living crisis, the event is more pertinent than ever.

"We're still dealing with the same issues, but not necessarily with the same people," he said. "Currently with the rental crisis, housing affordability, there's just simply not enough homes that are affordable, and even if we could solve the housing problem, the issues behind the scenes are mental health, drug addiction."

On the longest night of the year, June 22, NSW Premier Chris Minns will lie beside Lendlease managing director Tom MacKellar, Transport for NSW CEO Howard Collins and AllianceBernstein chief Jen Driscoll, in Martin Place to raise funds for Vinnies' homelessness services. If the weather is anything like it was on Thursday morning, when these leaders gathered to show their support for the Sleepout, they'll be in for a long, wet night.

Mr Minns told a press conference the government acknowledged they "needed to do more" on homelessness and donated \$50,000 from the Premier's discretionary fund to "kick the fund-



NSW Premier Chris Minns with St Vincent de Paul Society CEO Yolanda Saiz, and "Pete", a homeless man.

raising off". "I know the political leadership in the Labor Party, the Liberal Party, the previous government, we all recognise that more needs to be done," he said.

Support Centre co-ordinator at Redfern Donna Boyd said she loved the Sleepout event, but CEOs needed to acknowledge homelessness every day.

"I think CEOs have to realise every day, every single day, I see someone who has been homeless or is at risk of homelessness. It really can happen to anyone. I've seen so many people who just say to me, they never expected they would be in that position."

"The CEOs, everyone, needs to understand, no-one wake up one morning and says, hold on, I want to be homeless. It's not a decision," she said.

Ms Boyd has worked with people who are homeless every day of her 14-year career at Vinnies, and said with the cost-of-living crisis, she was seeing people

walk into the centre "who had previously never reached out". "It's heart-wrenching because you can see the difficulties they're having and how humbled they are because they haven't had to do it before and they never thought they would."

KPMG lead partner Vanessa Wolfe-Coote said the Sleepout would be a "humbling experience". "It's such a tiny, tiny fraction of what people go through. I feel it's the least I could do. It gives me a degree of empathy."

New Vinnies CEO Yolanda Saiz said it was their biggest fundraising event of the year, but also allowed them to educate business leaders and community. "They have a perception of homelessness when they walk in the room and they have a different perceptions when they walk out. That's really important ... because they have the influencers, the networks and connections to go out and talk about the issue," she said.

Truth on trial over NT child sex abuse

Continued from Page 1

"I've spoken to the police and the social workers, some of whom are out on stress leave at the moment because of the scenes that they've endured," Mr Dutton said.

"They have kids taking them back into homes where they've been sexually assaulted and six-year-olds grabbing onto their legs screaming not to be left there."

He cut off the line of questioning after the journalist asked for Mr Dutton's data, after which Senator Price joined in.

"The data that I know of suggest otherwise, that Indigenous children have experienced the highest rates of abuse in the nation and the children, particularly in places like remote communities, are those children that are suffering the most," she said.

The live broadcast was aired on ABC's 24-hour news channel but was cut off moments after Mr Dutton was asked questions by the reporter.

The live channel returned to host Joe O'Brien, who was presenting the news from Sydney, at 10.57am AEST. He told viewers: "Ok, we've got to leave it there because we are going to our break."

He then moved on to provide an update from the Bureau of Meteorology about tropical cyclone Ilsa approaching the West Australian coast.

An ABC spokesperson said the live broadcast cut away as scheduled because it was the top of the hour. "This is normal in TV broadcasting. The ABC replayed the questions and answers shortly afterwards as well as during the afternoon, and it was a key element of the 7pm news story, with the response."

The fallout comes just two months after the ABC aired an AM report that claimed there were elements of "white supremacy" at an Alice Springs community meeting that was held to discuss the concerns around rising crime in the area.

The ABC's corporate affairs department initially defended the story despite receiving extensive criticism. But four days later it did a backflip and apologised for air-

ing an "incomplete" story. Senator Price told The Australian on Thursday the ABC had shown it could not be trusted for transparent and unbiased journalism.

"It was an ABC question and Mr Dutton, who has actually spoken to locals and was ready to give their voices a megaphone, was cut off by the ABC," she said.

Senator Price strongly criticised Ms Worden's attack on Mr Dutton. "I think it's utterly disgusting that someone with the responsibility that she has will be in such denial," she said.

"They have failed the people of the Territory, they are failing to protect children and Kate Worden must be walking around with her eyes closed if she can't see what's going on."

"I have personally sat through court cases and heard the evidence: (for example a) teenage girl (gave) evidence of her own case where she was raped by her own father and heard the harrowing stories firsthand ... Everything they do suggests to me that they're trying to cover everything up and that includes the ability to debate issues in parliament itself, so I don't trust them a bit."

The Opposition Leader arrived in Alice Springs on Wednesday to meet residents who have faced a surge in youth and alcohol-fuelled violence.

Mr Dutton said it was "heart-breaking" to hear from locals who expressed concern for their safety and that of their loved ones.

"We've spoken to a number of locals who are making a decision to leave and to relocate to some other part of the Northern Territory, or indeed, to another part of the country, and that is devastating," he said.

He said another life would be lost and that "law and order" could be restored only if Anthony Albanese called in the AFP.

"If Natasha Fyles, the Chief Minister, is saying there's nothing to see in Alice Springs, then the Prime Minister should overrule her because he should listen to the people on the ground here and start to restore some dignity to protect these kids from continued violation of their own human rights," he said.

Advise ministers only: Brennan's voice call

PAIGE TAYLOR
RHIANNON DOWN

Jesuit priest and author Frank Brennan has told a joint select committee the Indigenous voice should be able to advise executive government via ministers only.

Words of the proposed amendment agreed to by the Albanese government and Indigenous leaders in the referendum working group on March 22 include that the "voice may make representations to the parliament and the executive government of the commonwealth on matters relating to Aboriginal and Torres Strait Islander peoples".

Father Brennan, rector at Newman College at the University of Melbourne and a long-time participant in the public discourse on constitutional recognition of Indigenous Australians, has made his suggested change as the joint select committee on the voice prepares to begin public hearings on Friday.

"Process and wording matter if we are to get to 'Yes' as resoundingly as possible," Father Brennan writes in his submission.

"Given the lack of bipartisanship in the parliament, it is all the more necessary that the wording of the proposed constitutional change, in the words of the late Robert Ellicott KC, contain no element of possible substantial confusion on legal or other grounds". For that reason, I urge the committee to recommend that the

words 'executive government' be replaced with 'ministers of state'."

However, two constitutional experts who advised Indigenous leaders on the voice question and amendment – George Williams and Anne Twomey – have written to the parliamentary inquiry giving reasons the amendment is sound in its current form.

In her submission to the inquiry, Professor Twomey, professor emerita at the University of Sydney, writes that the proposed amendment does not oblige government or parliament to consult the voice before making a law or policy as had been suggested in robust public debate. "It is impracticable to draw such implications from a provision of such breadth," she writes.

Professor Twomey says the amendment is worded in such a way that parliament can decide how the voice's advice is received.

"For example, parliament could legislate to require that all representations from the voice to parliament are to be sent to the presiding officers and tabled in parliament, or sent to a specific parliamentary committee to be considered by it," she writes.

Professor Williams writes in his submission that the proposed voice amendment strikes "an appropriate balance between establishing the constitutional parameters of the body while leaving key design features to parliament".

COMMENTARY P11

Tinamba food and wine festival returns



The Tinamba Food and Wine Festival is on Sunday.

Photo: Contributed

GIPPSLAND winemakers will be taking a break from vintage duties to celebrate at the popular Tinamba Food and Wine Festival this Sunday (April 16).

Wine Gippsland president, Alistair Hicks, of Blue Gables Vineyard, said that many of the association's members are nearing completion of the harvest for 2023, and are ready to showcase their current release wines.

"The Tinamba festival is a great opportunity to meet the winemakers, try their wines and find out the inside story on what they hope for vintage 2023," Mr Hicks said.

"We're hearing reports of top quality from the grapes that have been picked, and that's certainly been the case with ours.

"After a difficult few years throughout Gippsland, particularly in the East and Central areas, we're getting some terrific results."

The annual festival is in its 13th year and regularly attracts up to 2000 people. Seven local wineries: Blue Gables, Glenmaggie Wines, Lightfoot Wines, Nicholson River, Mt Moornapa, Narkoojee Wines and Wyanga Park will be among the stallholders at the April 16 event.

Hatted restaurant Tinamba Hotel will be serving

delicious lunch options, along with several local gourmet food producers. The Tinamba CFA will also be running a sausage sizzle.

Hip Pockets, a 10-piece R&B soul band, fresh from the Boolarra Folk Festival, is providing the entertainment.

Tickets are available on TryBooking via trybooking.com/CGNAC

There are also VIP marquees to hire for groups of 10.

Part of the ticket sales go to local community groups and service organisations who assist with the set-up and running of the festival.

For more information, follow Tinamba Food & Wine Festival on social media, or go to winegippsland.com



- MAFFRA Indoor Bowls Club will resume indoor bowls on Wednesday, May 3. Names in before 12.30pm. Names on the sheet in the clubhouse or phone 5147 1974 or Joy on 0438 456 875. Soup and sandwich luncheons will be held on the fourth Wednesday of each month, commencing Wednesday, May 23. Names to be submitted as per indoor bowls.
- A FREE community meal will be held on Monday, April 17 at St John's Anglican Church, corner Thomson and Church Street, Maffra beginning at 6pm. All welcome.

Time to apply for 2024 school places

THE state government is making it easier, clearer and fairer for young families enrolling kids into Prep, with a new process providing standardised dates and forms for all government schools.

Minister for Education Natalie Hutchins said the new approach to enrolling children into Prep will streamline the process for families, with applications now accepted from the start of Term 2 until July 28.

Parents and carers will receive offer letters back by August 11, while applications received after July 28 will be considered by schools as they are received.

"Starting school is an exciting and important milestone for any family, that's why we're making the process simpler, easier and fairer with standardised dates and forms for enrolment in all government primary schools," she said.

"We're well on target to open 100 new government

schools by 2026, with this year's update to Find My School showcasing more local school options and providing all the information parents and carers need at their fingertips."

As in previous years, families with children in Year 6 will receive a Placement Information Pack at the start of Term 2, which includes an application for Year 7 Placement Form. These will need to be submitted by May 12, with students across Victoria receiving offer letters on July 19.

Families applying for places at local government schools from the start of Term 2 can now also access the freshly updated Find My School website, which gives parents and carers the latest information on school zones.

First launched four years ago, the website allows families to find their designated neighbourhood government school and other nearby government schools, giving them clarity on what their

government school options are for their children.

It now includes 14 new schools and campuses set to open in 2024, along with small changes to existing school zones to reflect changes in school provision and adjustments to improve accessibility for all students.

Schools can be found by typing in a residential address or searching by school name or categories such as primary, secondary, or specialist school.

Every child has the right to enrol at their designated neighbourhood government school or, if there are sufficient places, at another government school of their choice.

Families can search their school zone by visiting findmyschool.vic.gov.au

More information on the enrolment process is available at vic.gov.au/starting-school

Opportunity to play your music

WELLINGTON Bluegrass Jammers provides an opportunity for musicians interested in bluegrass and traditional old time country music to get together and play the music they love on a regular basis.

The next jam will be held at Bond Street Event Centre, 10 Bond St, Sale, on Saturday, April 15 from 1pm to 4pm (note the change to Saturdays). There will be a \$10 entry fee to cover venue hire.

Wellington Bluegrass Jammers' aims to cater

to musicians of all abilities. Many bluegrass and old time tunes use simple chord progressions and instrumental virtuosity is not essential. The object is to encourage participation and enjoyment.

The group's Facebook page can be found at facebook.com/Wellington-Bluegrass-Jammers-349975162124941/, where you can see information of interest to the group, including clips of jam tunes.

For more information, call Steve on 0431 513 579.

Progress update on Esso's Bass Strait offshore facilities

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GP1656248



GOOD NEWS FOR LANDHOLDERS... FARM FORESTRY GRANTS ARE NOW AVAILABLE!

Would a program that integrates timber trees into your whole farm plan be of interest to you? Or are you a landowner looking to establish plantations to diversify income streams?

CALL FOR GRANT APPLICATIONS

VicForests is establishing a farm forestry program in Gippsland for landholders. The program encourages the expansion of farm forestry plantations to help address future timber and fibre requirements.

The program will focus on the establishment of suitable tree species, either within plantations or integrated with an agricultural enterprise. Grants will be awarded through an application process.

Grant applications open on 13 March 2023 and close on 14 of April 2023.

Further information is available at VicForests website: www.vicforests.com.au/farm-forestry



GP1654307

Appendix G-2 August 2023 newspaper advertisements

Safety call to clean chimneys



Victorian fire services are recommending homeowners across the state to prioritise cleaning their chimneys this winter to help prevent a fire. Photo: CFA

VICTORIAN fire services are recommending homeowners across the state prioritise cleaning their chimneys this winter to help prevent a fire occurring.

A chimney fire in a house in the town of Raglan late last month is a timely reminder of the importance of cleaning your chimney flue after a free-standing wood heater went up in flames.

Elmhurst Fire Brigade firefighter Hamish Keith witnessed the impacts first-hand of the flue that was 95 per cent blocked by soot.

“Because of the design of the heater and the way it was burning, there was a significant build-up of black tar, which evidently caused the blockage and the fire to ignite,” Mr Keith said.

“It looked like cancer inside an artery. From the top to bottom of this five-metre-high flue, you couldn’t see a torch light.

“Luckily, the family had working smoke alarms that alerted them to the fire, as smoke filled 60

per cent of their house due to the chimney being unable to exhaust it.”

CFA Chief Officer, Jason Heffernan, said the fire is a strong reminder to residents to have their chimneys professionally cleaned each year.

“This is just one of the damaging 48 chimney fires CFA have responded to this year,” Mr Heffernan said.

“As you warm your home this season, simply use a torch to regularly check for soot build-up or obstructions to reduce the risk of a fire starting from your fireplace or wood heater.

“Our latest statistics show us most fatal fires start in sleeping and living areas, so for your family’s best protection, smoke alarms should be installed in every bedroom, living and hallway area.”

FRV Commissioner, Gavin Freeman AFSM, said maintaining your working fireplace is essential for home safety.

“Those of us with a fireplace at home are enjoying them a lot at this time of year. Proper maintenance ensures they don’t pose a risk to your family home,” Commissioner Freeman said.

“Always use a fire screen in front of an open fire and keep wood, clothes and other combustibles at least one metre from fire.

“Extinguish your fire before going to bed or leaving the house, and check that embers are cold before disposing of them.”

Victorians are reminded that long-life battery or interconnected smoke alarms located in all bedrooms, hallways and living areas of the home can save lives for as little as \$20.

Chimney fire safety tips:

- Chimneys and flues should be cleaned annually;
- Over time there could be a build-up of creosote, a black tar-like residue, which is highly flammable and could clog up chimneys, and;
- Creosote is not only caused by general use, it can also build up faster if you are using incorrect fuels, such as green wood or treated timbers.

To reduce the risk of a fire starting from your fireplace or wood heater, you should:

- Use a torch to check for creosote build-up or obstructions;
- Have your chimney professionally cleaned annually;
- Only burn dry, clean wood, and;
- Extinguish your fire before going to bed or leaving the house.



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Esso’s Bass Strait activities

Progress update

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<https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub>

Community Sessions

If you would like to learn more about our offshore activities including Decommissioning, Carbon Capture and Storage and Jack Up Rig Drilling Kipper Environment Plan we invite you to come along to one of our community information sessions.

When: Tuesday 29 August 2023
Where: Bellevue on the Lakes Hotel, Lakes Entrance
Time: Any time between 5.30 pm - 6.30 pm

When: Wednesday 30 August 2023
Where: Drawing Room at the Criterion Hotel, Sale
Time: Any time between 5.30 pm - 6.30 pm

Please register your interest in attending by emailing consultation@exxonmobil.com by Friday 25 August 2023.

Pipelines Decommissioning Stakeholder Forum

Would you like to be more involved in the discussion about options and criteria being considered for decommissioning the pipeline network?

Please contact us by phone or email to register your interest in attending one of the following half-day stakeholder forums:

When: Tuesday 26 September 2023
Where: Sale

When: Tuesday 3 October 2023
Where: Melbourne

When: Wednesday 4 October 2023
Where: Online

Bushfire plan input



Member for Gippsland South Danny O'Brien is encouraging locals to provide input on Victoria's Bushfire Management Strategy. Photo: Contributed

MEMBER for Gippsland South, Danny O'Brien is encouraging Gippslanders to take part in community consultation designed to inform Victoria's Bushfire Management Strategy.

The establishment of Victoria's Bushfire Management Strategy is the result of recommendations from inquiries held in response to the Black Summer Bushfires that occurred in the summer of 2019/20.

Mr O'Brien said there are very few Gippslanders who do not understand the dangers of bushfires, with many having first-hand experience.

“This strategy will shape how the government manages bushfire prevention and response for the next 10 years,” Mr O'Brien said.

“Whether you are a CFA volunteer, a rural property owner or just someone with something to contribute, I encourage you to take the time to provide input into this strategy to ensure it adequately reflects the real concerns of those most impacted by bushfires.

“While you are welcome to make a formal submission, there is also an option to complete a brief survey.”

Consultation on the Bushfire Management Strategy closes on Wednesday, August 30.

For more information on the proposed strategy, or to make a submission or complete the online survey, visit the webpage at engage.vic.gov.au/project/victorias-bushfire-management-strategy

F-bomb a holiday play gift

Nui Te Koha

Ho, Ho ... No! The grinch at Melbourne's Malthouse Theatre are set to top the naughty list by programming a controversial holiday season play called F--k Christmas.

The play, written by controversial cabaret duo Sarah Ward and Bec Matthews, will be marketed by the theatre with the F-bomb spelled out in its full and unapologetic glory.

Malthouse's artistic director, Matthew Lutton, described the play as a "wild, mutinous, punk celebration" which challenges the status quo.

"From the suffocating binaries of boys and girls, naughty and nice, to the children forced to sit on an old man's knee, to the over consumption, joy, excess, greed, sharing, bringing people together, and tearing them apart, we're going to unwrap secular traditions and create an alternative celebration and tradition," he said at a program preview earlier this week.

Asked how the Malthouse will market the contentious piece, Lutton said: "It's really important to the artist that it has the full provocation of its title."

"It is not meant to be offensive but celebratory and fun," he said.

Filthy Frankston take away store ordered to pay \$55k

Souvlaki joint a 'petri dish'



Despina Karagiozis and (inset) her son, Sam.

Lucy Callander

A Frankston take away joint has been described as a "petri dish masquerading as a souvlaki shop" after being slapped with 42 breaches of the Food Act.

Souvlaki GR Frankston and its sole director Despina Karagiozis fronted Frankston Magistrates Court on Thursday following two failed food safety inspections by Frankston Council. They pleaded guilty to 13 charges and the remaining 29 were dropped.

Ms Karagiozis had taken on the "global" entity of Souvlaki GR after her son - Lamborghini driving crypto king Sam Karagiozis who was charged with major drug offences and money laundering in 2019 and 2021 respectively - resigned his role with the company.

The court heard council inspectors found frozen chips stored in a crate beneath a wash basin and "brown and soggy" lettuce, prepared in ad-



Souvlaki GR in Frankston.

vance and stored in a bucket when they first visited the Wells St takeaway on October 21, 2022.

Mouldy vegan cheese, out of date buttermilk and dozens of eggs that were more than two months past their use by date were discovered in a fridge along with an open packet of sausages, nine weeks past its August 24 expiry.

Frankston council prosecutor Bruce Gardiner said staff were seen reheating cooked spit meat which they advised was cooked the night before.

Food handling gloves were being used to plug a water leak

from the spit meat bain-marie.

Mr Gardiner said raw chicken skewers and raw pork, both with no use by date were also found along with five tubs of dip almost two months past their use by date of September 19 and another three that were eleven days past their October 10 expiry.

The wash basin in the staff toilet was not working and the only sink on the premises where hands could be washed had no hot water.

The shop floor was filthy, rubbish bins were overflowing and staff were not using food grade sanitiser in food preparation areas.

The corporation was notified of the breaches on the same day as the inspection and told inspectors would return in a week's time.

Souvlaki GR Frankston was convicted, placed on a 12 month bond and ordered to pay \$40,000 to the court fund.

Karagiozis was ordered to pay \$15,000 into the same fund.



Esso's Bass Strait activities

Progress update

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<https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub>



Experience you can count on

Did you attend Cranbourne High School between 1980-1988?

We are investigating allegations of abuse at the school and need your help. All calls and emails are confidential.

Please call Maurice Blackburn Lawyers today on

03 8102 2082

or email abuselawinfo@mauriceblackburn.com.au
mauriceblackburn.com.au/abuse



The visitor site features Dja Dja Wurrung-designed facilities, including a shelter, furniture and signage.



AT Lalgambuk (Mount Franklin), a new upgraded visitor site has been officially opened by Dja Dja Wurrung Clans Aboriginal Corporation (trading as DJAARA).

Chair of the DJAARA Board Trent Nelson described the Lalgambuk visitor site as having been 'Djaara-fied'.

"The visitor site features Dja Dja Wurrung-designed facilities, including a shelter, furniture and

signage, which we have built and installed through DJAARA's enterprise DJANDAK," Mr Nelson said.

"We are embedding Dja Dja Wurrung knowledge, language and culture back into the landscape at Lalgambuk, which is a very significant place for Djaara (Dja Dja Wurrung People).

"It's really important for Djaara to see ourselves in Djandak (Dja Dja Wurrung Country). And we are proud to share our Culture and Country with others.

"This upgraded "Djaara-fied" visitor site is a great outcome of DJAARA's Joint Management with Parks Victoria for the benefit of the whole community."

Parks Victoria District Manager Stuart Lardner said Parks Victoria is proud to be working with DJAARA to help people experience nature.

"This project broadens that experience at Lalgambuk, with upgrades that encourage both short visits and overnight camping. Importantly, the

upgrades also help visitors better understand the cultural landscape in which the visitor area sits," Mr Lardner said.

"This project is a wonderful example of Parks Victoria's commitment to Managing Country Together – a commitment to strong, meaningful partnerships with Traditional Owners," Mr Lardner added.

Lalgambuk is part of a significant cultural landscape with an oral history dating back 10,000 years.

The park is one of six parks and reserves on Dja Dja Wurrung Country that have been handed back to DJAARA to manage jointly with Parks Victoria.

The upgraded visitor site is the first Recreation, Cultural Practice and Customs (RCPC) area to be opened in a jointly managed park.

RCPC areas aim to empower Djaara to celebrate and practise their culture, while educating the wider community about Dja Dja Wurrung cultural values and practices.



Have your say on how water for domestic household purposes and stock watering should be regulated in NSW

Domestic and stock rights are a basic landholder right under the *Water Management Act 2000* allowing you to take and use water for domestic consumption and non-intensive stock watering without a water access licence or water use approval and in most cases a water supply work approval. These rights do not permit the construction of a dam or water bore without a water supply work approval.

These rights apply if you own or occupy a parcel of land which:

- has river, lake, or estuary frontage, or
- is overlying an aquifer.

Domestic and stock rights are largely unregulated. There is no limit on the volume of water that may be taken or detailed guidelines about how the rights to the water can be used.

The NSW Government has committed to a review of domestic and stock water rights and wants to hear from you on how these rights are currently used and whether they should be further regulated.

Complete our survey: water.nsw.gov.au/domestic-and-stock-rights



Esso's Bass Strait activities

Progress update

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Comfort and support thanks from Moe Lions

PATIENTS will be transported around Latrobe Regional Health with more safety and comfort thanks to support from the Moe Lions Club.

A recent donation has assisted the hospital to purchase a bariatric wheelchair, to support larger patients.

"This is such a welcome addition to our fleet of wheelchairs," LRH Nurse Unit Manager of the Nicholson Rehabilitation Unit, Paul Mark said.

"Standard wheelchairs are actually quite small, so someone who is particularly tall or with a large frame will find this chair much more comfortable and we'll be able to take them to physiotherapy or our hydrotherapy pool, safely and with a little more dignity," Physiotherapy Manager at Latrobe Regional Health, Amanda Alton was similarly thankful for the Lions Club's work.

"We can never get enough wheelchairs and a specialised one like this provides extra comfort and safety for people," she said.

"Some of our physio patients have to go to the gym twice a day for their therapy and to be able to safely get them there is really important."

Moe Lions Club members recently visited LRH to see the new chair.

President Ken Bechaz said while the club supports a range of community charities and causes, healthcare has always been a priority.

"LRH is important to us and the whole community. Before we supported LRH, we supported the Moe Hospital as well," Mr Bechaz said.



Wheely good donation: Latrobe Regional Health has benefitted thanks to the generosity of Moe Lions Club, who helped the hospital purchase a new bariatric wheelchair.

Photograph supplied

"No one wants to be in hospital or see a loved one in hospital but if we do need to become a patient, we'd all want the best possible equipment to be available."

For more information about donating to LRH, visit lrh.com.au

Many furry friends in need of homes

LATROBE City Council is encouraging those in the community to consider adoption as their first choice when looking to bring a pet into their family or household.

Dogs, cats, and other adorable animals are regularly available for adoption from the pound. For a small fee, the pet will come desexed, vaccinated, wormed, microchipped, vet checked and registered. In the last two months, 20 dogs and cats have been adopted from the pound.

Latrobe City Mayor, Kellie O'Callaghan believes that adopting an animal is a fulfilling way to bring a new member into the family and will also benefit the community.

"Domestic pets can have such a positive impact on the lives of their owners. They are loving creatures who can bring the community together, through using our pet-friendly facilities such as dog parks," the Mayor said.

"Adoption is a great option to consider when you are thinking about becoming a pet owner, because all animals at the pound are ready and waiting for a home.

"There are many reasons why pets end up needing a new home, and every adoption helps to make a difference."

Adopting an animal can be a rewarding

experience because you are helping to re-home an unclaimed animal. However, it is a big decision, so it's important to take time to consider the commitment that's involved with pet ownership.

Key considerations when deciding to adopt include whether you have enough time, a suitable home, and secure finances to support and care for a pet. If you are ready to become a pet owner, council highly recommends looking into the adoption process.

All animals available for adoption are listed on council's website with an Animal ID Number. Submitting applications can be done online or over the phone.

Using the website, expressions of interest can be made for an animal through providing their ID number, your name and contact details.

Over the phone, expressions of interest can be made through contacting the Local Laws team on 1300 367 700 and quoting the animal ID number.

If your application is successful, council will respond to let you know.

View all animals currently ready for adoption and find out more information at latrobe.vic.gov.au/Home/Animals_and_Pets/Impounded_Animals/Lost_Animals

MOARTZ inc Presents **Debra Oswald's**

Mr. Bailey's Minder

A dramatic comedy about the spirited relationship between an aging artist and his young carer.
Some coarse language and adult themes.
Directed by Sue Lindsay

CAST:
Erin Jessep
Barry Whitehead
Julie Strini
Peter Caddie

Monash Hall
Reserve Street
Yallourn North

September 2023
Dates & Times
Friday 1st 8pm
Saturday 2nd 8pm
Sunday 3rd 4pm
Thursday 7th 8pm
Friday 8th 8pm
Saturday 9th 2pm

ANGLICARE GIPPSLAND CHARITY NIGHT
THURSDAY 7 SEPTEMBER

Tickets @ \$30 (full) or \$25 (concession) Ticket available plus booking fee @ TryBooking <https://www.trybooking.com/CKDOZ>

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Winner drawn August 31st at the store 11am

27.5" WHEEL	500W MOTOR	THUMB THROTTLE	48V LITHIUM	7 SPEED GEAR
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Newsflow

YOUR WATER AND RECYCLED WATER UPDATE



East Gippsland

Water

New Water Efficiency Rebate Program

Water conservation is just as important as building new projects to ensure we manage our water resources sustainably and reduce the load on our sewerage plants and recycling farms. So, we are excited to introduce our new Water Efficiency Rebate Program.

Over the next five years, we have \$90k per financial year available to provide rebates to customers, both residential and small businesses to achieve water savings. There will be customer rebates available from \$10 up to \$1500.

Rebates are available for items such as low flow showerheads, dual flush toilets, a basket of water saving products, water efficient washing machines, swimming pool covers, water tanks and toilet/laundry connections and water conservation audits.

It's easy to claim your rebate, just keep your receipts and complete an application form. Further details on the rebate program are available on our website egwater.vic.gov.au or call our customer support team during normal office hours on 1800 671 841 to find out more.

Customer Charter

We have recently revised our Customer Charter to compliment the revised Water Industry Standards. The Customer Charter sets out our obligations to our customers in supplying water, wastewater and trade waste services.

The updates have been informed through extensive customer feedback across the Water Industry in Victoria and include:

- A strengthening of requirements relating to customer communication, to help ensure we communicate appropriately and sensitively with our customers
- Refined minimum standards regarding support for customers experiencing payment difficulty
- A reflection of changes in technology and communication channels since the last Customer Service Code review
- Clarification of the application of interest and debt management activities by East Gippsland Water.

All customers will receive a copy of the updated Customer Charter in a future bill or a copy is available on our website egwater.vic.gov.au.



Customer Connect

Where: Orbost Office, 6 Clarke Street

When: Thursday, 17 August 2023

Time: 9am to 4pm

Drop in and chat to a Customer Support Team member face-to-face about your bill, flexible payment options, financial hardship or for any general enquiry you may have.

We need your feedback on how we communicate!

We are looking to receive your input on how and when you would like to receive communications from us, and what information you would like to receive. The simple survey should only take up to five minutes of your time and will provide invaluable information so that we can improve our customer communications processes.

Please scan the QR Code or visit <https://www.surveymonkey.com/r/RX7BJQW> or call our Customer Support Team on 1800 671 841 for assistance.

Closing date: Thursday, 31 August 2023



Talking Water

Tune into our monthly podcast broadcasts on REG FM (90.7 and 105.5FM) as well as on our website.



Recruitment Opportunities!

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- Operations & Maintenance Reuse Team Member
- Senior Electrical Operator
- Operations & Maintenance Team Member - Bairnsdale and surrounds

If you're looking for your next career move, then check out the full details on our website egwater.vic.gov.au.



Members of the Lakes Entrance business community took part in a Damian Morgan marketing seminar last Wednesday night. Mr Morgan, a marketing expert from Queensland who has a particular focus in helping small businesses, made a presentation which aimed to ensure small businesses maximise their marketing potential. (PS)

Piper to honour Vietnam Vets

Lakes Entrance RSL will conduct the traditional Vietnam Veterans Day ceremony at the cenotaph on Marine Parade at 11am this Friday, August 18.

The date falls on the anniversary of the now legendary battle of Long Tan, where official sources report that in a battle in a cane field: "108 ordinary Australian boys fought and defeated two thousand five hundred Vietcong and North Vietnamese Army troops and in turn became extraordinary men."

This year also marks the 50th anniversary of the

Australian Government's official withdrawal from Vietnam on January 1, 1973. This is not to be confused with the announcement when, after only being in office for seven days, Prime Minister Gough Whitlam announced Australia's withdrawal.

By popular demand David Hynd, Corporal Melbourne Rats of Tobruk Pipers, will be a guest at the service. David's haunting performance on the bag pipes thrilled attendees at the Lakes Entrance ANZAC Day Service earlier this year.

"A small but dedicated

turnout is expected," RSL publicity officer, Robyn Cooney, said.

"Vietnam Veteran numbers are dwindling. Although time has come to view their contribution with historical perspective public acknowledgment of their prowess and that of their peers at Long Tan falls short of that demonstrated on ANZAC and Remembrance Day," she said.

Lakes Entrance RSL welcomes all members of the public to join them at the cenotaph on Marine Parade this Friday.



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Photo by Jason Blackeye on Unsplash

Gears in motion for Gelliondale wind farm

AN APPLICATION for a planning permit for the Gelliondale Wind Farm project has now been submitted to the Victorian Government.

The proposed project will consist of 13 wind turbines across 1500 hectares of cleared agricultural land and ancillary infrastructure including a battery energy storage system and substation.

The site is approximately seven kilometres south-west of Yarram, three kilometres west of Alberton and eight kilometres east of Welshpool.

Synergy Wind is developing the project with support from RWE Renewables Australia, the fourth

largest renewable energy generator in the world with 9.5GW of renewable energy assets worldwide. The wind farm will have a total capacity of about 80 megawatts and generate about 300,000 megawatt hours of renewable energy annually.

This equates to enough electricity to power up to 37,000 homes with clean renewable energy each year.

The planning permit application follows a referral to the Federal Government under the Environment Protection and Biodiversity Conservation Act.

"We are pleased to have submitted our application for a planning permit for the Gelliondale Wind Farm following detailed planning and technical investigations and environmental assessments," said Synergy Wind managing director Adam Gray.

"The full suite of supporting studies accompanying the application are now available on the project website.

Gelliondale Wind Farm will establish a grants program to support local landholders neighbouring the site as well as community projects.

The fund will distribute between \$160,000 and \$240,000 a year among neighbours and community organisations.

Updates on the assessment processes will be published on the Gelliondale Wind Farm website with links to relevant government resources provided as soon as they are established.

For further information about Gelliondale Wind Farm visit: gelliondalewind.com

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Inverloch Fire Brigade's 1st Lieutenant Matthew King has been making blood donations for almost a decade.

Saving lives is in Matthew's blood

INVERLOCH Fire Brigade's 1st Lieutenant Matthew King has been making blood donations for around a decade now, and he's kept this habit up for this year's Life-blood Emergency Services Blood Drive.

"I started donating when I began responding to road crash incidents and knowing that I could be helping those people who were involved even more," he said.

"I also know people who had cancer and needed blood transfusions, so I understand how vital it is to give blood, if you can.

"Being a universal O-negative blood type, it just made sense."

Matt said a common misconception he's noticed when discussing donating blood with friends and family is that they think "it's a bigger commitment than it actually is".

"Generally, I'm in and out in about half an hour," he said.

"It's super quick and makes a massive difference to people who need it."

As a CFA volunteer, Matt said it only makes sense to get involved in the blood drive and make regular donations.

"It really is just a continuation of what we do as CFA volunteers," he said.

"As volunteers our goal is to help our communities and we can push that further by doing this.

"I'd encourage anyone to head down to their local donor centre and give it a go, if they can."

The Red Cross Emergency Services Blood Drive runs from June 1- August 31. You can find out more at www.lifeblood.com.au



Victor Albon-Greenwood (front) and his family, mum, Conni Greenwood, Conni's partner, Jed Conroy, and grandparents, Lea and Robert Greenwood, with sushi Chef Masaaki at his Make-A-Wish experience in Tasmania recently. (PS)

A wish come true

Wishes really can come true, just ask nine-year-old Victor Albon-Greenwood, whose wish came true recently thanks to Make-A-Wish Australia.

The Marlo youngster recently travelled to Tasmania with his family to experience a wish that he had been anticipating for a long time – to meet sushi extraordinaire, Chef Masaaki, and to pat a Tasmanian devil.

As guest speaker at Make-A-Wish Australia East Gippsland's recent Christmas in July event, Victor's mum, Conni Greenwood, shared Victor's story, from the days that led to his brain tumour diagnosis at just three years of age, through his rehabilitation journey, and his recent wish come true.

It has been a tough road travelled by Victor and his family. Though he began walking at around 12 months of age, Conni knew there was something not right when he began falling over and was experiencing headaches. After numerous doctor and paediatrician visits brought no answers, the keen eye of Bairnsdale optometrist, Cameron Dyson, during a visit in June 2017, finally had the wheels turning.

Dr Dyson had Victor sent immediately to Bairnsdale Hospital emergency department, which led to an emergency flight to Melbourne in the middle of the night where a CT scan revealed a pear-sized tumour at the base of his skull.

Conni said expectations of removing a benign tumour and a return home in three weeks were dashed when Victor did not wake following the 13-hour surgery. Instead, he remained in a coma for three weeks. Upon waking he was unable to eat, speak, or move, and with Conni by his side he remained at Monash Children's Hospital for six months where the determined little boy relearned all the things he had only just begun to learn as a three-year-old.

Fast forward to today and Victor is still a determined boy. While a small piece of the tumour remains on watch, he is always ready with a smile and a thumbs up, enjoying life as young boys do, including playing football for Orbost's under 11s, wearing a neon shirt that indicates he's not to be tackled.

"He doesn't mind wearing the shirt, as long as he's embraced by the community and being a part of things, he's happy," Conni said.

"He's a ripper of a kid."

That ripper kid, and the ripper family who has been by his side through the entire journey, last month returned from seeing his wish come true.



Victor received a very special gift from Chef Masaaki and his partner, Lucy - some handmade chop sticks made from Huon pine. (PS)

While it may have seemed like forever for it to eventuate, the Make-A-Wish Australia journey having commenced during the COVID-19 pandemic, the wait was most definitely worth it. As unusual as it may seem for a young boy, his wish was to meet sushi Chef Masaaki.

"He's had a mature taste since he was very little, and he loves seafood, prawn and crab and that sort of thing, and when he saw Chef Masaaki on Rick Stein's cooking show, he just really wanted to meet him," Conni said.

"His wish was to meet Chef Masaaki (who is based in Geeveston, Tasmania), pat a Tassie devil, and stay in nice accommodation. We'd made so many trips to Melbourne during his treatments and stayed in some average places, so he wanted to stay somewhere nice.

"It was the best trip. The accommodation was out of this world beautiful, and the people we met for our organised activities were the loveliest people.

"Vic loved Bonorong Wildlife Sanctuary. We thought he might not get to pat a Tassie devil, that they would be a bit growly, but they were like puppy dogs. He patted a wombat, fed an echidna, and his grin was ear to ear the whole time."

Sanctuary staff said Victor is welcome to visit whenever he likes, for the rest of his life, for as long as he's interested.

Then there was the visit to Chef Masaaki.

"Geeveston is a little town like Marlo," Conni said.

"There's not much there, not many people, but Chef Masaaki is so famous people line up half an hour before he opens, just to get some of his sushi.

"He's currently renovating his restaurant and was continuing to serve his customers, but he took a few of hours out of his day and made us a cozy corner where we watched him make his sushi with some out of this world skills. He was so fast with his sharp blade, and Victor got to get in and have a turn.

"He and his wife, Lucy, shared lunch, and told us stories. It was beautiful."

At the Christmas in July lunch Conni thanked all involved in having Victor's wish granted in such an amazing way.

"The people we met in Tasmania took the time to be so kind, and I can see that Make-A-Wish Australia brings the best out in people," Conni said.

"We wanted to come here to say thank you. You make such a difference in people's lives.

"Victor's wish was for him first and foremost, but for the families that have to go through it with their sick loved one, it's nice to be able to share the full circle, from where we've been to now, after flying to Melbourne with nothing but the shirts on our backs and staying down in Melbourne for six months, it's nice that we're able to share this experience in Tassie with Vic, having the best of everything and to see him come so far.

"Thanks to Make-A-Wish Australia, and the East Gippsland branch. You make a real difference."



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Voice wording 'could be challenged in court'

CHRIS MERRITT

One of the nation's leading silks has warned that the referendum on the proposed Indigenous voice to parliament is vulnerable to legal challenge in the High Court because it misleads voters.

Stuart Wood KC has produced a legal opinion that says the referendum question fails to state the core function of the proposed Indigenous voice to parliament and the executive.

Instead, the question that will be presented to voters emphasised the notion of constitutional recognition of Aboriginal and Torres Strait Islander people.

In an opinion written jointly with barristers Paul Jeffreys and Jakob Patela, Mr Wood states that the emphasis in the referendum question on constitutional recognition is significant because there is differential support among electors for recognition and the proposed voice.

"In our view, the government's

proposed question misleads and misinforms voters about what they are being asked to approve," they write.

Their opinion, which was commissioned by the Institute of Public Affairs, says the referendum question is seriously deficient and "will be open to challenge by seeking relevant relief".

Potential remedies could be a High Court declaration that an answer to the referendum question cannot be taken to constitute approval of the proposed change to

the Constitution, or an injunction preventing the question being put to electors, their opinion says.

While their opinion focuses only on potential remedies that could be sought from the High Court before the referendum, it will place the government under pressure to change the referendum question or risk High Court action if there is a successful outcome for the Yes case.

One of those familiar with the opinion said the likelihood of successful intervention by the High

Court could be stronger after a successful referendum than if the court were asked to intervene before the question had been considered by voters.

Independent senator Lidia Thorpe urged the government on Wednesday to call off the referendum, describing constitutional recognition as "window dressing" for the proposed voice.

The Wood opinion says the referendum question fails to state the core function of the voice which is to make representations to parliament and the executive branch of government on matters that relate to Aboriginals and Torres Strait Islander people. It says the referendum question portrays the voice as only a symbolic step.

At the moment, the government's referendum question will ask voters if they approve of "a proposed law to alter the Constitution to recognise the First Peoples of Australia by establishing an Aboriginal and Torres Strait Islander voice".

The Wood opinion contains options on how this could be changed in order to avoid the risk of a High Court challenge. One option would make it clear that parliament could not restrict the matters that would be subject to representations by the voice. This option would ask voters if they approve of "a proposed law to alter the Constitution by establishing a body to be called the Aboriginal and Torres Strait Islander voice that, despite any act of parliament to the contrary, may make representations to the parliament

and the executive government on matters relating to Aboriginal and Torres Strait Islander peoples."

Morgan Begg, who is the IPA's director of research, said the Wood opinion suggested the voice to parliament could be mired in protracted court disputes before the referendum.

"It is a worrying sign of things to come," he said, and urged the government to immediately revise the referendum question.

COMMENTARY P21

Chemist reforms 'may hit aged-care bottom lines'

EXCLUSIVE

JESS MALCOLM

The nation's peak aged-care body has privately emailed members warning that Labor's proposed pharmacy changes could affect the care of residents and the bottom line of struggling facilities.

The Australian can reveal that since July, the sector raised concerns about Labor's move to double the amount of medicines accessed from a single script and how it could affect accessibility of drugs in aged-care facilities.

In an email sent by the Aged and Community Care Providers Association, the organisation's senior policy adviser, Mohamad Mahat, expressed concern the new policy "may impact on your operation/residents' care and possibly your bottom line".

"ACCPA is working closely with the DHAC (Department of Health and Aged Care) to mitigate any risks and minimise unintended consequences," the letter said. "The government wants to hear from you regarding

areas of concern and potential solution to these issues."

The Australian last week revealed new data that found aged-care residents would have to pay more than \$800 a year each for their weekly medicine as a result of Labor's move to double drug dispensing.

A financial analysis commissioned by the Pharmacy Guild found elderly Australians living in residential aged care would pay at least \$806 to have their medicine packed and delivered when Labor's 60-day dispensing policy begins on September 1.

Medicines are currently individually portioned and delivered to 188,000 aged-care residents each week by pharmacies free of charge in the form of Websters-paks, with the cost subsidised by the government through dispensing fees.

The pharmacy sector says it will not be able to cover the cost of these services because of dispensing fees being halved under Labor's pharmacy reforms.

The costing was blasted by Health Minister Mark Butler, who labelled it a "big scare cam-

paign" from the Pharmacy Guild that was "frankly false".

Still, concern is growing in the aged-care sector that the policy may hurt struggling providers.

In the sector's first public comments on the policy, ACCPA chief executive Tom Symondson suggested the government should do more to protect the aged-care sector.

"We encourage government to consider the range of policy measures available to them to ensure there are no unintended consequences or costs for aged-care residents, or any adverse financial impacts on residential aged-care providers," he said.

Mr Butler told The Australian the policy would halve the cost of medicines for more than six million Australians, including aged-care residents who had a chronic health condition: "Sixty-day prescriptions means Australians get twice the medication for the cost of a single prescription."

Opposition health and aged care spokeswoman Anne Ruston labelled the prospect of further costs on the aged-care sector as "alarming".



Emergency services workers at the cordoned-off block
NCA NEWSWIRE / NICHOLAS EAGAR

Radioactive matter found in suburban apartment

REMY VARGA
ELLEN WHINNETT

Residents of an apartment block in Sydney's inner south were evacuated after border police found sealed containers of low-level radioactive material during a raid, triggering a multi-agency response that shut down a suburban street.

Emergency services personnel including Fire and Rescue and NSW Police on Thursday directed residents away from the block of units on Kelsey St, Arncliffe, near Sydney Airport. The block was cordoned off, while men in white hazmat suits entered the property.

The Australian Border Force raided the red brick block of units

about 8am and found what is believed to be nuclear isotopes.

Fire and Rescue NSW said hazmat operators located low-level radioactive isotopes "in suitable and effective containers", with no sign of radiation release.

"FRNSW established a 10-metre exclusion zone around the property as firefighters, in protective clothing used special detectors to inspect the site," said a spokesperson.

"They were able to further seal the material without incident."

"Three occupants of the address were taken to hospital, purely for observation."

NSW Environment Protection Authority testing found no evidence of radioactive exposure.

FRNSW declared the scene safe and evacuated residents

were allowed to return home.

Isotopes are a type of atom with an equal number of protons but a different number of neutrons, according to the International Atomic Energy Agency.

"There are stable isotopes, which do not emit radiation, and there are unstable isotopes, which do emit radiation," the IAEA said.

"The latter are called radioisotopes."

"The hazard presented is highly dependent on the type of radioisotope and how it is handled," an Australian Radiation Protection and Nuclear Safety Agency spokesperson said.

Short exposure periods to a source of low radioactivity are unlikely to result in a significant health risk.

Branch stack beef 'taken seriously'

RACHEL BAXENDALE
VICTORIAN POLITICAL REPORTER

Daniel Andrews says complaints made by family members of men whose signatures were forged after their deaths by a Labor Party branch associated with senior Victorian minister Lily D'Ambrosio will be a matter for an "independent, robust" Labor Party process that will be "taken seriously".

Responding to revelations in Thursday's The Australian that the families of Antonio Donato and Celestino Nigro intended to complain to Labor Party Monitor John Thwaites, the Victorian Premier distanced himself from what he described as a "party matter" before using question time to praise Ms D'Ambrosio as an "outstanding minister".

His comments come after The Australian on Tuesday revealed that the Labor South branch of the Labor Party, which has been the source of Ms D'Ambrosio's internal power for more than 20 years, had renewed Mr Donato and Mr Nigro's party memberships in 2018 and 2019, despite their deaths in 2017.

Membership renewals require fees to be paid and membership forms to be signed, meaning someone paid money on their behalf and forged their signatures.

The Australian also confirmed that at least nine people who were registered as Labor South branch members in 2019 have no recollection of having paid membership fees, in some cases over the course of more than a decade of membership.

The branch held its meetings in Ms D'Ambrosio's office until at least 2019, with 100 per cent of memberships paid via cash.

Asked on Thursday whether he would welcome Mr Thwaites investigating allegations of branch stacking in D'Ambrosio-linked branch, Mr Andrews said "complaints and independent processes" were "a matter for the party".

"That's a matter for an independent, robust process, and one that is taken seriously," the Premier said.

Asked whether he would require all his MPs to co-operate with any inquiry, he said: "I would expect that all of our team and every member of the Labor Party, whether you're in the parliament or not, follows the rules of the party, and these processes are laid out as part of the rules."

In response to questions from Opposition Leader John Pesutto in question time, Mr Andrews defended his close factional ally.

"The Minister for Energy, Climate Action and the SEC is an outstanding minister, and if you made one-hundredth of her contribution to this place, you'd be doing well," the Premier said of Ms D'Ambrosio.

Mr Andrews denied there was "any comparison" between the allegations concerning Ms D'Ambrosio's branch and those that cost Adem Somyurek and three of his ministerial colleagues their jobs after the Bracks-Macklin audit in the wake of the 2020 branch stacking scandal.

"If the Leader of the Opposition wants to draw comparisons between what we all sat and watched on the 60 Minutes program, and what has been reported this week, I don't think there is any comparison," he said.

Asked whether he would refer Ms D'Ambrosio to IBAC, Mr Andrews said the corruption watchdog had powers to investigate without a referral.

Mr Pesutto said Mr Andrews had "one rule for his mates, and one rule for his foes."

Esso's Bass Strait activities

Progress update

An ExxonMobil Brand



Esso actively engages with relevant people across the Gippsland region and consults them as we work through our offshore activities.

This ongoing communication has played an essential role in how we align our approach and ensure the work that we are undertaking meets the community's needs and expectations.

Community Sessions

If you would like to learn more about our offshore activities including Decommissioning, Carbon Capture and Storage and Jack Up Rig Drilling Kipper Environment Plan we invite you to one of our community information sessions.

When: Tuesday 29 August 2023
Where: Bellevue on the Lakes Hotel, Lakes Entrance
Time: Any time between 5.30 pm - 6.30 pm

When: Wednesday 30 August 2023
Where: Drawing Room at the Criterion Hotel, Sale
Time: Any time between 5.30 pm - 6.30 pm

Please register your interest in attending by emailing consultation@exxonmobil.com by Friday 25 August 2023.

Pipelines Decommissioning Stakeholder Forum

Would you like to be more involved in the discussion about options and criteria being considered for decommissioning the pipeline network?

Please contact us by phone or email to register your interest in attending one of the following half-day stakeholder forums:

When: Tuesday 26 September 2023
Where: Sale

When: Tuesday 3 October 2023
Where: Melbourne

When: Wednesday 4 October 2023
Where: Online

Scan the QR code for more information on our offshore activities on our Consultation Hub.



<https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub>



Notice to Bankwest customers.

Please be advised that from 18 September 2023 the interest rate reductions that apply to funds withdrawn prior to the maturity date of a term deposit is changing to the following:

Term elapsed as part of total term	Rate reduced by
0% to less than 25%	1.20% p.a.
25% to less than 50%	0.90% p.a.
50% to less than 75%	0.60% p.a.
75% to less than 100%	0.30% p.a.

As at that date, clause 6.3 (Term Deposit Terms & Conditions), Clause 12.3 (Online Term Deposit Disclosure Statement) and clause 8(a) (Business TD Direct Product Disclosure Statement) will be updated to reflect the above updated interest rate reductions.

Additionally, the worked examples in the Term Deposit Terms & Conditions and Online Term Deposit Product Disclosure Statement will be updated to reflect updated dates and the updated interest rate reductions.

A copy of the updated documents will be available at bankwest.com.au, Bankwest Branches or by phoning 13 17 19.

For more information
13 17 19
bankwest.com.au

Appendix H: EPOs, EPSs, controls and measurement criteria

Table H-1 Environmental performance – Activities

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
Physical presence – Seabed disturbance	Change in habitat, smothering and change in water quality.	1.	Avoid physical damage to sensitive habitats (i.e. benthic features such as reefs).	CMP1: Pre-activity site inspection	1	ROV seabed survey confirms the proposed location is free from seabed obstacles, including benthic features, identify any pipelines in the area, and ensure that the JUR can be positioned away from any flowlines, umbilicals, hydraulic flying leads/electrical flying leads, jumpers or pipelines.	Rig arrival ROV clearance report notes the absence of seabed obstacles.
				CMP20: JUR move procedure	2.	The approved JUR move procedure details how the rig will be moved onto and moved off location. It includes approach path, communication protocols, Permit to Work arrangements and survey criteria to prevent an impact with subsea assets.	Approved procedure is available on site and utilised. Daily reports confirm that the procedure is followed.
				CM32: NOPSEMA Accepted Well Operations Management Plan	3.	The NOPSEMA accepted WOMP describes how the risks to the integrity of the wells will be reduced to ALARP. This includes: <ul style="list-style-type: none"> • That two barriers have been maintained • That barrier integrity is tested and verified • That the wells are plugged and abandoned and left in a safe state. The well head will not be removed until the P&A program has been completed in accordance with WOMP requirements.	Records confirm a NOPSEMA-accepted WOMP was in place before operations commence. Records demonstrate that the P&A has been completed in accordance with the WOMP prior to well head removal.
				CMP38: Remove Wellhead (WH) and casing strings at or below mudline	4.	The casing strings will be cut at or below mudline, followed by casing, WH and guide bases removal. The cuts will be made with an internal cutting tool with at least two attempts. In the event that internal cutting tool is not successful, an ROV deployed external cutting tool will be used to cut at or below mudline. In the event that the WH casing/guide bases cannot be successfully removed, the equipment will be left in place and status recorded in accordance with the below. Should temporary storage be required, the items will be maintained in accordance with the inspection, maintenance and repair processes outlined in the Bass Strait Operations EP (AUGO-EV-EMM-002) Refer to <ul style="list-style-type: none"> • CM6: Temporary storage assessment • CM70 The Subsea Material Register • CM1: Maintenance activities for facilities already at CoP are implemented in accordance with Section 572 (2) Requirements 	Well Operations records confirm depth of cut and as left survey shows seabed clear of subsea equipment. Temporary storage assessment (if required) Subsea Material Register NOPSEMA notification records
Physical interaction – Other marine users	Change to the function, interests or activities of other users.	2	Marine users are informed prior to commencement of the P&A activities such that they are able to plan their activities and avoid unexpected interference.	CMP2: Petroleum Safety Zone	5	Petroleum Safety Zones (PSZs) established in accordance with OPGGS Act.	PSZs are gazetted and published on the NOPSEMA website.
					6	Presence of navigation aids and communication systems on rig. Collaboration with AHO in providing adequate warnings and Notices to Mariners.	Records confirm that navigation aids are in place and notifications are made prior to field activities.
				CM36: Pre-start notifications	7	AMSA JRCC notified before operations commence to enable AMSA to distribute an AUSCOAST warning.	Records confirm that information to distribute an AUSCOAST warning was provided to the JRCC before operations commenced. Issued AUSCOAST

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
							warning dated prior to, or on the date operations commenced.
					8	AHO notified before operations commence to allow generation of navigation warnings (including Notice to Mariners).	Issued Notice to Mariners dated prior to, or on the date operations commenced.
					9	Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.	Minutes of engagement forums confirm upcoming activities discussed.
Planned discharge – Sewage and food waste	Change in water quality and fauna behaviour.	3.	Sewage discharges comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex IV requirements.	CM9: Class certification	10	Rig and vessels are compliant with MARPOL Annex IV as appropriate to vessel class.	Vessels have class certification verified and issued by International Association of Classification Societies (IACS) member.
			Food waste discharges comply with MARPOL Annex V requirements.	CM9: Class certification	11	Rig and vessels are compliant with MARPOL Annex V as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
Sound emissions	Injury to fauna and change in fauna behaviour.	4.	<p>There is no injury (TTS and PTS) or displacement from foraging, aggregation, calving/breeding or migrating grounds in cetacean BIAs from sound emissions.</p> <p>No injury, harm or interference to cetaceans from sound emissions during support vessel operations or from conductor driving activities.</p>	CMP4: Helicopter Pilot	12	<p>Interaction between helicopters and cetaceans within the Operational Areas (OAs) will be consistent with Part 8 Division 8.1 of the EPBC Regulations.</p> <p>Helicopters will not fly lower than 1650 ft (503 m) when within 500 m horizontal distance of a cetacean except when landing or taking off and will not approach a cetacean from head on.</p>	Annual refresher memo demonstrates that pilots are aware of flight requirements when in the vicinity of a cetacean.
				CM8: Vessel Master	13	<p>Vessel masters will implement cetacean interaction management actions consistent with the <i>Australian National Guidelines for Whale and Dolphin Watching 2017</i> (Commonwealth of Australia, 2017 (which enact) Part 8 Division 8.1 of the EPBC Regulations, including:</p> <ul style="list-style-type: none"> • Caution zones - vessels will not knowingly travel faster than 6 knots within 300 m of an adult whale or 150 m of an adult dolphin • vessels will not knowingly get closer than 100 m of a whale or 50 m of a dolphin. <p>If a cetacean approaches the vessel within the above zones, the vessel will avoid rapid changes in engine speed or direction.</p>	Daily operations reports note when cetaceans were sighted in the caution zone and interaction management actions implemented.
				CMP26: Fauna observations	14	<p>Bridge crew are trained and competent in whales observation and species identification as part of their normal requirements and ability to comply with Part 8 Division 8.1 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p> <ul style="list-style-type: none"> • Trained Bridge crew undertake continuous observations • Vessels are required to have two Watchkeepers on the bridge at all times when operating near the facility. • One Watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe navigation of the vessel 	<p>Watchkeeper certificates of competency</p> <p>Vessel Crew MFO training records</p> <p>Esso Pre-hire assessment records</p> <p>Esso Vessel Inspection records</p>

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
						including keeping compliance with COLREGs Rule 5 which requires that the vessel at all times maintains a proper look-out by sight, hearing and all available means appropriate to the prevailing circumstances and conditions, including marine fauna observations. <ul style="list-style-type: none"> • All Watchkeepers hold Certificates of Competency recognized by the vessel Flag State which can only be obtained by completing years of sea service, including understudy time on watch on the bridge. • All vessel operators are required to maintain compliance with the EPBC Act and other relevant conservation management plans. As such, vessel crews complete MFO training to ensure that obligations with respect to marine mammals are observed while they are in charge of the vessel. • Esso verifies the crew MFO training as part of pre-hire and routine EP compliance inspections. • The vessels have multiple pairs of binoculars available to Watchkeepers. • Marine megafauna identification charts are posted onboard. 	
					15	Vessel Masters, the JUR OIM and all crew undertake an awareness induction for managing sound impact megafauna this includes awareness in: <ul style="list-style-type: none"> • Whale observation, species identification and distance measurement and reporting. • Providing photos/pictures of the different megafauna expected in the area at the time of the geophysical activity, including the location of the mammal identification chats on board on display on the vessel. • Instructions on the pre-start, requirements (as listed in CMP33). • Instructions on distance estimation, including the specification that marine binoculars with reticles are used. • Instructions on how to detect marine megafauna based on observations on the water surface and surrounds. • Instructions on data to be recorded for marine megafauna sightings, including time of observation, type and number of species observed and estimated location coordinated. • Location of binoculars available to Watchkeepers. Note if there is any uncertainty or species type the precautionary principle applies and all adaptive management measure will be applied, see CMP33	Induction records.
					16	Crew members on active duty will report observations of megafauna to bridge watch officers as soon as it is safe to do so.	Daily reports confirm recordings of cetacean sightings.
					17	During conductor drive activities (November to March) at Marlin B, several crew trained in visual observation on the platform will commence visual observations of the extended 3km observation zone for 30 minutes prior to undertaking conductor drive activities <ul style="list-style-type: none"> • If a whale is observed in the observation zone conductor piling will not commence until the whale has left the observation zone and has not been observed for more than 30 minutes. 	Daily reports confirm recordings of cetacean sightings.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
						<ul style="list-style-type: none"> Observations will continue during the activity and if at any time a whale is observed in the observation zone the conductor driving activity will cease until the whale has left the observation zone and not been observed for more than 30 minutes. 	
					18	<p>During conductor drive activities (April to October) at Marlin B, several crew trained in visual observation as well as a dedicated and trained MFO will be on the platform will commence visual observations of the extended 3 km observation zone for 30 minutes prior to undertaking conductor drive activities</p> <ul style="list-style-type: none"> If a whale is observed in the observation zone conductor piling will not commence until the whale has left the observation zone and has not been observed for more than 30 minutes. Observations will continue during the activity and if at any time a whale is observed in the observation zone the conductor driving activity will cease until the whale has left the observation zone and not been observed for more than 30 minutes. 	Daily reports confirm recordings of cetacean sightings.
				CMP33: Adaptive management	19	<p>Vessel based observations within the behavioural zone around the vessels will be undertaken while on route to the OA at the start of the activity, prior to and during rig moves. If a PBW or SRW is observed (or if there is any uncertainty in species identification) the following action will be undertaken:</p> <ul style="list-style-type: none"> Delay rig moves until whale has been confirmed outside of the behavioural zone or no new sightings for 30 minutes Delay support vessel operations or moves and delay beginning unloading/loading activities until whale has been confirmed outside of the behavioural zone or no new sightings for 30 minutes If already in transit, vessels will reduce speed, adjust heading if safe to do so and apply the caution zone requirements of CM8 <p>During unloading/loading operations whilst a support vessel is alongside the JUR, the support vessel will either stop operations if safe to do so and move away from the behavioural zone, or if not safe to stop operations, reduce thrusters to as low as possible and adjust heading.</p>	Daily reports confirm recordings of cetacean sightings and all actions undertaken.
Light emissions	Change in fauna behaviour.	5.	Lighting will be limited to that required for safe navigation and work requirements.	CMP30: Lighting will be limited	20	Lighting will be limited to that required for safe navigation and work requirements, with unnecessary lighting minimised.	Inspection confirms light spill to sea is minimised, except where required for safe work/navigation.
				CMP40: Contingency Venting and Flaring Procedure	21	<p>The contingency venting and flaring procedure will include all commitments with regards to flaring such as:</p> <ul style="list-style-type: none"> Venting and Flaring associated with trapped gas will be minimised and a one off activity for potentially Whiptail-1A, Mulloway-1 and East Pilchard-1. Volumes of Hydrocarbon (liquids and gas) flared, and duration of flaring will be recorded. Flare and associated equipment is operated and maintained to ensure efficiency of burn. Burner pilots remain ignited during the flow back activities to minimise dropouts. 	Daily operations reports include volumes of hydrocarbon sent to vent or flare and duration of venting/flare operation.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
						<ul style="list-style-type: none"> Dedicated crew on flare watch whilst flaring undertaken to ensure flame can be quickly re lit or flaring ceased if required. 	
Planned discharge – Treated bilge water and deck drainage	Change in water quality.	6.	Deck drainage discharges comply with MARPOL Annex V requirements.	CM9: Class certification	22	Rig and vessels are compliant with MARPOL Annex V as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
			Bilge discharges from vessels comply with MARPOL Annex I requirements.	CM9: Class certification	23	Rig and vessels are compliant with MARPOL Annex I as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
Emissions to air	Change in air quality. Contribution to greenhouse gas effect.	7	Fuel combustion equipment complies with the requirements of MARPOL Annex VI.	CM9: Class certification	24	Rig and vessels are compliant with MARPOL Annex VI as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
				CMP40: Contingency Venting and Flaring Procedure	25	The contingency venting and flaring procedure will include all commitments with regards to flaring such as: <ul style="list-style-type: none"> Venting and Flaring associated with trapped gas will be minimised and a one off activity for potentially Whiptail-1A, Mulloway-1 and East Pilchard-1. Volumes of Hydrocarbon (liquids and gas) flared, and duration of flaring will be recorded. Flare and associated equipment is operated and maintained to ensure efficiency of burn Burner pilots remain ignited during the flow back activities to minimise dropouts Dedicated crew on flare watch whilst flaring undertaken to ensure flame can be quickly re lit or flaring ceased if required.	Daily operations reports include volumes of hydrocarbon sent to vent or flare and duration of venting/flare operation.
Planned discharge – Cement	Change in water quality.	8	All cements and additives approved according to chemical discharge assessment process.	CM3: Chemical discharge assessment process	26	All cement and additives planned for discharge are evaluated as acceptable in accordance with the chemical discharge assessment process.	Chemical assessment records confirm evaluation of each component making up cement as acceptable prior to use/discharge and appropriate approvals documented. Environmental performance fluid tracking shows cement and additives used.
			No discharge of unmixed cement.	CMP5: Cementing procedures	27	Cementing procedures developed and implemented including no surface or seabed discharge of any dry unmixed cement. Cementing procedure outline the volume of cement to be used and inventory of cement kept on board the JUR is kept to the minimum required for safe execution of the activities. Stock management is undertaken to limit the volume of excess unused cement at the end of the program in the following order of preference: <ul style="list-style-type: none"> all cement used in the P&A program with no discharge required 	Cementing procedures developed and implemented. Environmental performance fluid tracking verifies no discharge of unmixed cement. Cement report verifies stock management process and lists volume of any discharge of cement slurry

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
						<ul style="list-style-type: none"> effort made to minimise inventory of cement on board effort made to transfer any remaining cement on board to the next operator and if not possible then; effort to use remaining cement in another Esso operation, if not possible then; effort to dispose of remaining cement in last P&A, if not possible then; effort to transfer cement onshore for disposal – subject to feasibility analysis, if not possible then; minimal volume of cement (<50m³) is mixed into a slurry and discharged overboard at the end of campaign. 	Feasibility analysis completed 6 months prior to end of campaign.
Planned operational discharge – Subsea	Change in water quality. Change in habitat. Smothering.	9	All operational discharges approved according to chemical discharge assessment process.	CM3: Chemical discharge assessment process	28	All chemicals planned for discharge are evaluated as acceptable in accordance with the chemical discharge assessment process.	Chemical assessment records confirm evaluation of all chemicals as acceptable prior to use/discharge and appropriate approvals documented. Environmental performance fluid tracking shows components of operational subsea discharges.
Planned operational discharge – Surface	Change in water quality. Change in habitat.	10	All operational discharges approved according to chemical discharge assessment process.	CM3: Chemical discharge assessment process	29	All planned chemical discharges are evaluated as acceptable in accordance with the chemical discharge assessment process.	Chemical assessment records confirm evaluation of chemical discharges as acceptable prior to use/discharge and appropriate approvals documented. Environmental performance fluid tracking shows components of all planned operational discharges.
					30	When selecting barite, Esso will ensure that the contaminant limit concentrations are at or below the following: Mercury (Hg) – 1 mg/kg (1 ppm) dry weight in stock barite. Cadmium (Cd) – 3 mg/kg (3 ppm) dry weight in stock barite.	Chemical assessment records confirm evaluation of chemical discharges as acceptable prior to use/discharge and appropriate approvals documented. This includes consideration of concentration levels where applicable.
					31	Test result for circulated fluids/tank washings/sodium chloride brine fluids must be below 5% oil in water by volume to be acceptable for discharge.	Test reports document circulated fluids/tank washings/sodium chloride brine fluids oil in water content measured. Oil in water content of circulated fluids/tank washings/sodium chloride brine fluids is recorded in environmental performance fluid tracking when discharge occurs.
			Circulated fluids/tank washings/sodium chloride brine fluids measured for accepted maximum oil content and removal of solids before discharge.	CMP6: Worksite Operations Safety Plan	32	The rig circulation and solids handling equipment (i.e. Shakers) will be used to maintain the mud system and minimise the required volume used in operations.	Daily mud reports record all volumes of water-based muds used.
Aspects of unplanned events							

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
Physical interaction – Marine fauna	Injury/mortality to fauna.	11.	No injury or death of megafauna resulting from vessel strike.	CM8: Vessel Master	33	Vessel Master is aware of and implements interaction management actions consistent with Part 8 Division 8.1 of the EPBC Regulations, including: <ul style="list-style-type: none"> vessels will not knowingly travel faster than 6 knots within 300 m of a whale or 150 m of a dolphin vessels will not knowingly get closer than 100 m of a whale or 50 m of a dolphin if a cetacean approaches the vessel within the above zones, the vessel will avoid rapid changes in engine speed or direction. 	Daily operations reports note when cetaceans were sighted in the caution zone and interaction management actions implemented.
Physical presence - Introduction of IMS	Change in ecosystem dynamics.	12.	No introduction and establishment of IMS.	CM23: Ballast Water Management Plan	34	Ballast Water Management Plan approved in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention) and guidance (Resolution MEPC.127(53), 2005)).	Records show an approved Ballast Water Management Plan which complies with the BWM Convention requirements, including implementation of D-2 standard, in accordance with the agreed timeline per the Class or flag state of the respective vessel.
				CM24: Ballast Water Management Certificate	35	Ballast Water Management Certificate approved in accordance with the BWM Convention, including implementation of D-2 standard, as per the agreed timeline.	Records show an approved Ballast Water Management Certificate which complies with the BWM Convention requirements, including implementation of D-2 standard, in accordance with the agreed timeline per the Class or flag state of the respective vessel.
				CMP7: Ballast water record system	36	Ballast water record system is maintained in accordance with Regulation B-2 of the Annex to the BWM Convention including: <ul style="list-style-type: none"> start and finish coordinates actual pumping times residual volume remaining in the tank at the end of the empty cycle prior to refill (empty refill method only). 	Ballast water records.
				CM25: Biosecurity clearance when entering Australian territory	37	Vessel Master to obtain biosecurity clearance to enter Australian territory through pre-arrival information reported through the Maritime Arrivals Reporting System.	Records confirm biosecurity status.
				CM8: Vessel Master	38	Vessel Master to adhere to Australian ballast water requirements and BWM Convention.	Ballast water records show location of ballast water uptake and discharge.
				CM26: Invasive Marine Species Risk Assessment Procedure	39	Biofouling risk assessment conducted in accordance with Esso's IMS Risk Assessment Procedure (AUGO-EV-PCE-014) shows low risk.	Biofouling risk assessment record confirms vessel poses low risk of introducing IMS.
				CMP8: Immersible retrievable equipment cleaning	40	All immersible retrievable equipment has been cleaned and/or inspected in accordance with <i>National Biofouling Guidelines for the Petroleum Production and Exploration Industry</i> (DAWE, 2022) prior to commencement of activities at each location.	Records document cleaning and/or inspection of immersible retrievable equipment.
Accidental release –	Change in habitat.	13.	No dropped objects which result in	CMP1: Pre-activity site inspection	41	ROV seabed survey confirms the proposed location is free from seabed obstacles, including benthic features, identify any pipelines in the area, and	Rig arrival ROV clearance report notes the absence of seabed obstacles.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
Dropped objects	Change in water quality.		disturbance of benthic habitat.			ensure that the JUR can be positioned away from any flowlines, umbilicals, hydraulic flying leads/electrical flying leads, jumpers or export lines.	
				CMP20: JUR move procedure	42	The approved JUR move procedure details how the rig will be moved onto and moved off location. It includes approach path, communication protocols, Permit to Work arrangements and survey criteria to prevent an impact with subsea assets.	Approved procedure is available on site and utilised. Daily reports confirm that the procedure is followed.
				CMP10: Crane handling and transfer procedures	43	The crane handling and transfer procedure is in place and implemented by crane operators (and others, such as dogmen).	Completed handling and transfer procedure checklist, Permit to Work and/or risk assessments verify that the procedure is implemented prior to each transfer.
				CM18: Preventative Maintenance System	44	Visual inspection of lifting gear is undertaken every quarter by a qualified competent person (e.g. maritime officer) and lifting gear is tested regularly in line with the Preventative Maintenance System (PMS).	Inspection of PMS records and lifting register verifies that inspections and testing have been conducted to schedule.
				CM19: Cargo Securing Manual	45	All cargo securely fastened to or stored during transport in accordance with approved Cargo Securing Manual to prevent loss to sea.	A completed pre-departure inspection checklist verifies that cargo is securely sea-fastened.
				CMP11: JUR Move Guidance Checklist	46	All cargo securely fastened to or stored during transport in accordance with Cargo Securing Manual or JUR move guidance checklist to prevent loss to sea.	JUR Move Guidance Checklist verifies that cargo is securely sea-fastened.
Accidental release –Waste	Injury/mortality to fauna and change in habitat.	14	No unplanned overboard release of waste.	CM9: Class certification	48	JUR and vessels are compliant with MARPOL Annex V as appropriate to vessel class which includes measures to prevent loss of waste to the ocean such as: <ul style="list-style-type: none"> prohibition of discharge of garbage to the sea (other than as permitted for bilge, sewage and food waste) separation of garbage by recommended types any receptacles on deck areas, or areas exposed to the weather should be secured on the ship and have lids that are tight and securely fixed all garbage receptacles should be secured to prevent loss, spillage. 	Vessels have class certification verified and issued by IACS member.
				CMP12: Garbage Management Plan	50	Rig and vessels have a Garbage Management Plan which identifies the procedures for collecting, storing and disposing of garbage.	Inspection verifies that waste is segregated, stored and handled in accordance with the Garbage Management Plan.
Accidental Release – Loss of containment: Hazardous or non-hazardous substances	Change in water quality.	15	No unplanned release of hazardous or non-hazardous substances to the marine environment.	CM14: Procedures for bulk transfer of fluids from support vessels	51	Bulk transfer of fluids from support vessels undertaken in accordance with relevant procedures.	Permit to Work records for liquid bulk transfers.
				CMP13: Design and certification of hoses	52	Transfer hoses shall comprise sufficient floating devices and self-sealing weak-link couplings in the mid-section of the hose string, where required, and suitable pressure rating.	Hose certificate confirms suitable fittings and rating.
				CM18: Preventative Maintenance System	53	The rig transfer hoses are inspected and replaced in accordance with the PMS or when they are visibly degraded.	The rig hose register and PMS indicate regular inspection and replacement of fuel/chemical/mud hoses.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria				
				CM21: Remotely Operated Vehicle (ROV) pre-post dive checks	54	A ROV pre- and post-dive inspection visually check for leaks.	Records of ROV pre- and post-dive inspection checklist.				
				CM22: Remotely Operated Vehicle International Marine Contractors Association Audit	55	ROV installation inspected against IMCA guidelines.	Audit report developed and corrective action(s) managed in accordance with IMCA category rating				
				CMP14: Bunding	56	Bulk liquid transfer points and equipment located on deck utilising hydraulic fluids will have primary bunding or sheathing.	Inspection records demonstrate that bulk transfer points and equipment located on deck utilising hydraulic fluids have primary bunding or sheathing.				
					57	Chemicals and oils stored on deck are stored within bunded areas.	Inspection records demonstrate that chemicals and oils stored on deck are stored within bunded areas.				
				CM20: Shipboard Marine Pollution Emergency Plan	58	MARPOL Annex I specifically requires that a SMPEP (or equivalent, according to class) is in place.	Vessel have SMPEP in place.				
Accidental release – Loss of containment: Refined oils (collision)	Injury/mortality to fauna. Change in habitat. Change to the function, interests or activities of other users.		No unplanned release of marine diesel oil (MDO) to the marine environment from support vessel collision.	CM27: Support vessel approach procedure	59	Rig to coordinate with support vessels to avoid a collision (Refer to Valaris Support Vessel approach procedure) (Valaris, 2021).	Radio operations communications log verifies coordination with approaching vessels have been issued when necessary.				
				CM28: Activity Specific Operating Guidelines/Critical Activity Mode procedures	60	ASOG (or Well Specific Operations Criteria)/Critical Activity Mode procedures developed to IMCA standards.	Implementation procedures signed by Vessel Master and available.				
				CM29: Support vessel dynamic positioning system	61	All support vessels engaged in DP operations have Class-recognised DP2 or DP3 systems.	Records of IACS member DP Notation, Failure Mode and Effects Analysis, proving trials and Annual Trials.				
					62	Watchkeepers in charge of watch hold DP certification.	Watchkeepers' DP certificates available.				
				CM36: Pre-start notifications	63	AMSA JRCC notified before operations commence to enable AMSA to distribute an AUSCOAST warning.	Records confirm that information to distribute an AUSCOAST warning was provided to the JRCC before operations commenced. Issued AUSCOAST warning dated prior to, or on the date operations commenced.				
					64	AHO notified before operations commence to allow generation of navigation warnings (including Notice to Mariners).	Issued Notice to Mariners dated prior to, or on the date operations commenced.				
					65	Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.	Minutes of engagement forums confirm upcoming activities discussed.				
						16		CM20: Shipboard Marine Pollution Emergency Plan	66	MARPOL Annex I specifically requires that a SMPEP (or equivalent, according to class) is in place.	Vessels have class certification verified and issued by IACS member.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
			Minimise the impact on the environment of an MDO spill.	CM12: Oil Pollution Emergency Plan	67	Capability is maintained to ensure OPEP can be implemented in response to an incident, as expected. Emergency response activities will be implemented in accordance with the OPEP.	Test records confirm that emergency response capability has been maintained in accordance with that described in Attachment 2 ERP and the OPEP. Records confirm that emergency response activities have been implemented in accordance with the OPEP.
				CM35: Operational and Scientific Monitoring Plan (OSMP)	68	Capability is maintained to ensure the OSMP can be implemented in response to an incident, as expected. Operational and scientific monitoring will be implemented in accordance with the OSMP.	Test records confirm that emergency response capability has been maintained in accordance with that described in the OSMP. Records confirm that emergency response activities have been implemented in accordance with the OSMP.
Accidental release – Reservoir hydrocarbons (LOWC)	Injury/mortality to fauna. Change in habitat. Change to the function, interests or activities of other users.	17	Maintain well control such that reservoir hydrocarbons are not released to the marine environment.	CM32: NOPSEMA Accepted Well Operations Management Plan	69	The NOPSEMA accepted Well Operations Management Plan (WOMP) describes how the risks to the integrity of the wells will be reduced to ALARP. This includes: <ul style="list-style-type: none"> • That two barriers have been maintained • That barrier integrity is tested and verified • That the wells are plugged and abandoned and left in a safe state • The well head will not be removed until the P&A program has been completed in accordance with WOMP requirements. 	Records confirm a NOPSEMA-accepted WOMP was in place before operations commence. Records demonstrate that the P&A has been completed in accordance with the WOMP prior to well head removal.
				CM34: NOPSEMA accepted Safety Case	70	The NOPSEMA accepted rig Safety Case demonstrates how the risks to the integrity of the wells will be reduced to ALARP, including: <ul style="list-style-type: none"> • planned maintenance of pressure well control equipment • testing of well control equipment • validation of activity specific safety critical equipment. 	Records confirm a NOPSEMA-accepted rig Safety Case was in place before operations commenced. Records demonstrate that operations have taken place in accordance with processes described in the Safety Case.
				CMP16: P&A design	71	P&A procedures consider well design, fluid selection and formation pressures to ensure that there are two barriers in the well at any time. Procedures signed off at appropriate level of management.	Well-specific P&A procedures have been signed off by the Wells Engineering Supervisor and Wells Operations Superintendent. Changes to the approved procedures are managed by MOC.
				CMP17: Esso approved plug and abandonment procedures	72	Procedures consider well design, fluid selection and formation pressures to ensure that there are two barriers maintained at any time.	Approved procedures are available onsite and distributed to Esso and rig leadership. Daily reports confirm that these procedures are followed.
				CMP18: Evaluation of reservoir properties	73	Risk profiling and P&A design are peer reviewed and approved by appropriate levels of management. Each well is subject to this process and considers reservoir properties for placement of barriers.	P&A program is reviewed and approved by Wells Engineering Supervisor and Wells Operations Superintendent.
				CM18: Preventative Maintenance System (PMS)	74	PMS ensures that Pressure Control Equipment (PCE) and control systems are maintained, to enable reliable performance.	Records show routine completion of maintenance in accordance with PMS.

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria	
				CMP19: Pressure Control Equipment testing	75	PCE is tested before deployment on each well.	Records show that PCE has successfully passed PCE test prior to deployment of the PCE and subsequent tests as per WOMP.	
		18	No loss of containment of hydrocarbons from damage to subsea assets.	CMP20: JUR move procedure	76	The approved JUR move procedure details how the rig will be moved onto and moved off location. It includes approach path, communication protocols, Permit to Work arrangements and survey criteria to prevent an impact with subsea assets.	Approved procedure is available on site and utilised. Daily reports confirm that the procedure is followed.	
				CMP21: Rig mover	77	The rig is moved onto and off location under the control of a rig mover.	Daily reports confirm that the rig mover is in control of rig moves.	
		19	Minimise the impact on the environment from a LOWC.		CM12: OPEP	78	Capability is maintained to ensure OPEP can be implemented in response to an incident, as expected. Emergency response activities will be implemented in accordance with the OPEP.	Test records confirm that emergency response capability has been maintained in accordance with that described in Attachment 2 and the OPEP. Records confirm that emergency response activities have been implemented in accordance with the OPEP.
					CM35: OSMP	79	Capability is maintained to ensure OSMP can be implemented in response to an incident, as expected. Operational and scientific monitoring will be implemented in accordance with the OSMP.	Test records confirm that emergency response capability has been maintained in accordance with that described in the OSMP. Records confirm that emergency response activities have been implemented in accordance with the OPEP.
					CMP22: Source Control Emergency Response Arrangements included in the Australia Wells Tier II/III Emergency Response Plan	80	Source control emergency response arrangements consistent with IOGP Report 594 (IOGP, 2019) will be in place prior to commencement of P&A Activities. Source control emergency response arrangements includes: <ul style="list-style-type: none"> • Subsea First Response Toolkit • Requirements for installation of capping stack (including logistics plan) if required • drilling a relief well (if required). 	Check/gap analysis against the requirements of IOGP Report 594 (IOGP, 2019). Contracts with third-party provider for well construction material, as well as logistics contracts are in place for this campaign.
					CMP23: Availability of suitable MODU to drill relief well	81	Availability of MODU to meet minimum requirements/ specifications for the MODU (to drill relief well).	Status and location of suitable MODU to drill relief well identified 30 days prior to P&A activity commencing on first well and on a monthly basis throughout the P&A campaign.
		CMP24: Availability of resources to meet relief well timeframe commitments	82	In the unlikely event that there is no suitable MODU available, or information becomes available to Esso or its rig contractor to indicate that resources may be required beyond those identified in the SCERP to allow a relief well to be drilled in the committed 98-day timeframe, the well activities will be made safe and any further activities will be suspended until such time as the activity can comply with this EP or the EP is resubmitted and accepted.	Records of tracking process indicate that a suitable MODU were available/identified throughout the activity. A review of ExxonMobil's global inventory will be conducted prior to beginning operations to confirm requirements for a relief well are available			

Aspect	Impact	EPO Number	EPO	Control	EPS Number	EPS	Measurement criteria
		20	Minimise the impact on commercial fisheries from a LOWC.	CM51: Utilisation of idle fishing vessels	83	Opportunities to utilise idle fishing vessels for oil spill response and monitoring activities will be taken where there is agreement of the vessel owner and where a risk assessment shows that there are no additional risks to vessels and crew.	Esso IMT records reflect communications with fishing industry looking for opportunities to utilise idle fishing vessels.
				CM52: Communication with fisheries	84	Should a spill occur, then updates on oil spill response and monitoring will be provided to fishery representative bodies (through South Eastern Trawl Fishing Industry Association (SETFIA)) to enable accurate information on spill status, impacts and effects on seafood safety to be provided to fishing industry members and the public. Daily updates provided in the first week until the modelling is completed and then as needed, until relief well completed (and beyond if there is ongoing concern).	Relevant persons consultation records show communication with SETFIA per the performance standard.

Table H-2 Environmental performance – Emergency response capability

EPO	Control	#	EPS	Measurement criteria	
Esso IMT is available to respond as required to coordinate spill response operations in a timely manner to minimise impact to the environment.	Esso IMT.	85	Trained personnel are available to fulfil Incident Commander, Operations Section Chief, Planning Section Chief, Logistics Section Chief, Safety Officer and Environmental Unit Lead roles with 1 hour of Esso IMT activation.	Offshore IMT Staffing list (ERM V0) Capability is demonstrated during test/drill and is documented in test/drill report. Training records.	
		86	ExxonMobil’s Regional Response Team (RRT) support is available for a Tier III response in: <ul style="list-style-type: none"> <12 hours from notification for remote support <72 hours for in country support. 	Capability is demonstrated during test/drill and is documented in test/drill report. RRT Member Database	
		87	A minimum of four Esso Australia personnel will be provided initial IMT oil spill training, in the Incident Command function, using the IMO3 training course.	Offshore IMT staffing list is maintained (ERM V0). Records of training	
		88	A minimum of 10 Esso Australia personnel will be provided initial IMT oil spill training to fulfill Section Chief roles, using the IMO2 training course.	Offshore IMT staffing list is maintained (ERM V0). Records of training	
		89	A minimum of 12 Esso Australia personnel will be provided IMT training to fulfill supporting IMT roles, using the PMAOMIR322 course.	Offshore IMT staffing list is maintained (ERM V0). Records of training	
		90	Agreement in place with AMOSC, OSRL and OSMP service provider to facilitate access to trained personnel.	Esso will have required contracts, agreements, and memberships with AMOSC in place to support incident management.	Agreement with AMOSC Agreement with OSRL Agreement with OSMP service provider
		91	ExxonMobil maintains agreement with The Response Group and Ambipar Response	ExxonMobil maintains agreement with The Response Group and Ambipar Response to provide global incident response capability	Agreement with The Response Group Agreement with Ambipar Response
Members of the Offshore IMT participate IMT drills or exercises to maintain competency.		92	Offshore IMT members participate in scheduled drills and exercises.	Exercise records	

EPO	Control	#	EPS	Measurement criteria
Source control equipment is available when required to prevent further uncontrolled release of hydrocarbons into the marine environment.	Agreements in place with ROV specialist.	93	Current global agreements state that a ROV appropriate to the task will be available. Estimated 5 days from call out request to arrive in Victoria.	Current global agreement document.
	Support vessel identification process.	94	Suitable support vessels and their location during the activity will be identified prior to rig activities.	Completed register in the Tier II/III Emergency Response Plan (ERP).
	Agreements with the Australian Marine Oil Spill Centre (AMOSC) for Subsea First Response Toolkit.	95	Agreements with AMOSC for Subsea First Response Toolkit.	Annual review of agreement document.
	Memorandum of Understanding with AEP.	96	Current AEP Memorandum of Understanding states that signatories will make best endeavours to make drilling units available for transfer between operators when requested for emergency response.	Memorandum of Understanding document.
Equipment and third-party services are available to complete oil spill surveillance and monitoring when required to gather information on the extent, severity and persistence of the oil and potential sensitivities at risk.	Helicopter fleet.	97	A helicopter is available to complete surveillance and monitoring in <4 hours of request, subject to safe flying conditions. (Note: Assumes good visibility, daylight hours and suitable flying conditions).	Capability is demonstrated during test/drill and is documented in test/drill report.
	Arrangements with third-party for provision of fixed wing aircraft.	98	Third-party fixed wing aircraft will be available <24 hours from request of service.	Capability is demonstrated during test/drill and is documented in test/drill report.
	Support vessel.	99	Support vessel is available to complete surveillance and monitoring in <24 hours from request of service.	Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement with third-party suppliers for provision of additional vessels.	100	Current agreement states additional vessels will be available when requested.	Agreement document.
	Agreement with AMOSC for trajectory modelling.	101	Trajectory modelling is through AMOSC within <4 hours of service request.	Agreement document.
	Tracking buoys.	102	Tracking buoy is available to complete surveillance and monitoring within 12 hours of spill occurring subject to safe conditions.	Functionality is demonstrated during test/drill and is documented in test/drill report.
	Contract with satellite imagery provider.	103	Current agreement with satellite imagery provides 24/7 emergency response support.	Agreement document.
	Esso initial response sampling kits.	104	Esso initial response sampling kit with required equipment is available when required. Samples obtained <24 hours of spill occurring subject to safe conditions.	Functionality is demonstrated during test/drill and is documented in test/drill report.
Dispersant and equipment for applying dispersant is available when required to reduce consequences to surface and shoreline values and sensitivities.	Agreement with service provider for monitoring and sampling.	105	Monitoring and sampling service provider has capability to implement the Bass Strait OSMP.	Annual capability review.
	Esso-owned dispersant stocks.	106	Sufficient dispersant volume (estimated 12 m ³) is available to mobilise for the first 24 hours of the response.	Annual dispersant testing report.
	Dispersant application equipment.	107	Equipment is maintained in response ready condition.	Annual equipment inspection report.

EPO	Control	#	EPS	Measurement criteria
	Agreement with AMOSC for dispersant capabilities.	108	Response capabilities maintained per service level statement including access to mutual aid and the National Plan (which provides dispersant stockpiles within 24 hours of request).	Annual assurance assessment report.
	Agreement with Oil Spill Response Limited (OSRL) for dispersant capabilities	109	Response capabilities maintained per service level statement including access to OSRL Global Dispersant Stockpile within 48 hours.	Annual assurance assessment report.
	Support vessel.	110	Support vessel is available to complete surface dispersant application in <24 hours from request of service.	Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement with third-party suppliers for provision of additional vessels.	111	Current agreement states additional vessels will be available when requested.	Agreement document.
Containment and recovery equipment is available when required to recover spilt oil before shoreline or other sensitivity contact.	Containment and recovery vessels.	112	Esso will have access to containment and recovery vessels per Attachment 5 (Table 6-5).	Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement in place with AMOSC.	113	Esso will have required contracts, agreements and memberships with AMOSC in place to provide oil spill response equipment and personnel per Attachment 5 (Table 6-5) within 72 hours.	Contracts, agreements or memberships that demonstrate access to spill response equipment and personnel.
	Annual assurance assessment of AMOSC capabilities.	114	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Personnel trained for containment and recovery activities.	115	Personnel trained in oil spill response equipment operation per Attachment 5 (Table 6-5) within <24 hour of request of service.	Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement with waste management contractor.	116	Current contract in place for onshore waste management in timeframe described in Attachment 5 (Table 9-6).	Agreement document.
Equipment and personnel available to support shoreline protection and clean-up when requested to reduce oil impact on shoreline environmental sensitivities.	Agreement with third-party Bass Strait OSMP-implementation consultant.	117	Esso will have required contract in place to enable access to personnel and resources required for implementation of the Bass Strait OSMP in the timeframe described in Attachment 5 (Table 7-10).	Current agreement in place for Bass Strait OSMP-implementation consultant. Capability testing conducted and recorded.
	Annual review of agreement with third-party suppliers for provision of vessels.	118	Esso will have required contracts in place to enable access to vessels needed for shoreline protection in the timeframe described in Attachment 5 (Table 7-10).	Current agreement in place for vessels which meets standard. Capability testing conducted and recorded.
	Esso/AMOSC response equipment.	119	Equipment is maintained in accordance with maintenance strategy. Equipment is available for deployment within 24 hours.	Monthly exception reports show any overdue maintenance, inspection, and/or testing tasks with actions signed-off by the appropriate level of operations management. Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement in place with AMOSC.	120	Esso will have required contracts, agreements and memberships with AMOSC in place to provide oil spill response equipment and personnel in timeframe described in Attachment 5 (Table 7-10).	Contracts, agreements or memberships that demonstrate access to spill response equipment and personnel.

EPO	Control	#	EPS	Measurement criteria
	Annual assurance assessment of AMOSC capabilities.	121	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Personnel hiring agreements.	122	Current agreements in place with labour hiring companies.	Agreement documents.
	Agreement with waste management contractor.	123	Current contract in place for onshore waste management in timeframe described in Attachment 5 (Table 9-6).	Agreement contract. Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement with contractor for heavy plant equipment.	124	Current agreement in place with contractor for heavy plant equipment. Equipment is available for deployment within 48 hours.	Agreement documents. Capability is demonstrated during test/drill and is documented in test/drill report.
Equipment and personnel to support oiled wildlife response are available when requested to monitor, evaluate and reduce environmental impact on fauna.	Agreement in place with AMOSC.	125	Esso will have required contracts, agreements and memberships with AMOSC in place to provide oiled wildlife response equipment and personnel per Attachment 5 (Table 8-6) for deployment within 24 hours.	Contracts, agreements or memberships that demonstrate access to oiled wildlife response equipment and personnel.
	Annual assurance assessment of AMOSC capabilities.	126	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Agreement in place with OSRL.	127	Esso will have required contracts, agreements and memberships with OSRL in place to provide oiled wildlife response equipment per Attachment 5 (Table 8-6) for mobilisation to Melbourne within 72 hours.	Contracts, agreements or memberships that demonstrate access to oiled wildlife response equipment and personnel.
	ExxonMobil's RRT.	128	ExxonMobil RRT Oiled Wildlife Response Core team personnel are available for remote support within 12 hours and in country support within 72 hours.	Capability is demonstrated during test/drill and is documented in test/drill report.
	Agreement with waste management contractor.	129	Current contract in place for onshore waste management. Equipment is available for deployment within 48 hours.	Contract agreement. Capability is demonstrated during test/drill and is documented in test/drill report.
Equipment and personnel to manage waste are available when requested to reduce secondary contamination impacts on shoreline environmental sensitivities.	Annual review of agreement with third-party suppliers for provision of vessels.	130	Esso will have required contracts in place to enable access to vessels needed for waste management in the timeframe described in Attachment 5 (Table 7-10).	Current agreement in place for vessels which meets standard. Capability testing conducted and recorded.
	Agreement in place with AMOSC.	131	Esso will have required contracts, agreements and memberships with AMOSC in place to provide oil spill response equipment and personnel, and waste management resources in timeframe described in Attachment 5 (Table 9-8).	Contracts, agreements or memberships that demonstrate access to spill response equipment and personnel.
	Annual assurance assessment of AMOSC capabilities.	132	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
	Agreement with waste management contractor.	133	Current contract in place for onshore waste management in timeframe described in Attachment 5 (Section 9.3.1).	Agreement contract. Capability is demonstrated during test/drill and is documented in test/drill report.
	Personnel hiring agreements.	134	Current agreements in place with labour hiring companies.	Agreement documents.

EPO	Control	#	EPS	Measurement criteria
	Agreement with contractor for heavy plant equipment.	135	Current agreement in place with contractor for heavy plant equipment. Equipment is available for deployment within 48 hours.	Agreement documents.

Appendix I: RPS Oil Spill Modelling report

JACK-UP RIG WELL PLUG AND ABANDONMENT

Oil Spill Modelling



MAQ1277J
Jack-up Rig Well Plug and
Abandonment Oil Spill
Modelling
Rev1
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REPORT

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25 August 2023

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TERMS AND ABBREVIATIONS

Abbreviations	Terms
AMSA	Australian Maritime Safety Authority
API	American Petroleum Institute gravity. A measure of how heavy or light a petroleum liquid is compared to water.
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
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 (single) 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.
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.
MAHs	Monoaromatic Hydrocarbons
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
PAH	Polynuclear Aromatic Hydrocarbons
Pour Point	The pour point of a liquid is the temperature below which the liquid loses its flow characteristics.
Shoreline accumulation	Arrival of oil at or near shorelines at on-water concentrations equal to or exceeding defined threshold concentrations. Shoreline accumulation 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.
Stochastic (multiple) 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 areas of potential 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 affected 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.

WGS 1984	World Geodetic System 1984 (WGS84); reference coordinate system.
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EXECUTIVE SUMMARY

Background

Esso Australia Pty Ltd (Esso) is planning to plug and abandon (P&A) 21 non-producing platform wells and 5 subsea wells in the Gippsland Basin, off the Victorian coastline.

In order to support the development of Environmental Plan (EP) and Oil Pollution Emergency Plan (OPEP), Esso commissioned RPS to undertake a detailed oil spill modelling study assessing the following hypothetical scenarios:

- **Scenario 1:** A 61,544 m³ (405,575 bbl) surface release of West Kingfish crude (analogue) over 98 days following a loss of well control at the Whiptail well location; and
- **Scenario 2:** A 22,747 m³ (149,903 bbl) surface release of Halibut crude (analogue) over 98 days following a loss of well control at the Mulloway well location.

The results for each scenario are presented on an annual basis.

The purpose of the modelling is to provide an understanding of a conservative ‘outer envelope’ of the Potentially Exposed Area (PEA) that may be affected 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 that the released hydrocarbon may influence.

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 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 spill simulations (per scenario) initiated using the same release information (spill volume, duration and composition of the oil) at random start times. This ensured that each simulation was subject to different wind and current conditions and, in turn, movement and weathering of the oil for an annual based assessment.

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

Crude oil analogues have been used for the Whiptail and Mulloway wells because they never came into production.

The West Kingfish crude (as the analogue for Whiptail) oil has an API of 45.7 and a density of 798.1 kg/m³ (at 15°C) with a viscosity value (2.0 cP at 15°C) classifying it as a Group II (light-persistent) oil according to the International Tankers Owners Pollution Federation (ITOPF, 2014) classification scheme.

The Halibut crude oil (as the analogue for Mulloway) has an API of 40.6 and a density of 821.5 kg/m³ (at 15°C) with a viscosity value (2.97 cP at 15°C) classifying it as a Group II (light-persistent) oil according to the ITOPF (2014) classification scheme.

Key Findings

Scenario 1 – 61,544 m³ Loss of Well Control from Whiptail

- The maximum distance from the release location to the low (≥ 1 g/m²), moderate (≥ 10 g/m²) and high (≥ 50 g/m²) floating oil exposure levels was 375.5 km (east-northeast), 53.4 km (south-southwest) and 2.4 km (southwest), respectively.
- A total of 30 Biologically Important Areas (BIAs) were predicted to be exposed to floating oil at, or above, the low threshold.
- The probability of contact to any shoreline at, or above, the low threshold (≥ 10 g/m²) was 100% and the minimum time before shoreline contact at, or above, the low threshold was 1.29 days. The maximum volume ashore for a single spill trajectory was 1,267.6 m³ and the maximum length of shoreline contacted at the low threshold was 382.0 km. Additionally the maximum length of shoreline contacted at the moderate (≥ 100 g/m²) threshold and high ($\geq 1,000$ g/m²) shoreline thresholds was 106.0 km and 33.0 km, respectively.
- The shoreline assessment identified a total of 2 Ramsar areas, 15 LGAs and 29 Sub-LGAs predicted to experience shoreline accumulation at, or above, the low threshold.
- The maximum distances to the low (≥ 10 ppb), moderate (≥ 50 ppb) and high (≥ 400 ppb) dissolved hydrocarbon thresholds from the release location were predicted to be 1,521 km (east-northeast), 1,453 km (northeast) and 724 km (east-northeast), respectively.
- In the surface (0-10 m) depth layer, a total of 40 BIAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold.
- The maximum distance to the low (≥ 10 ppb) and high (≥ 100 ppb) entrained hydrocarbon thresholds from the release location was 1,518 km (northeast) and 1,092 km (east-northeast), respectively.
- In the surface (0-10 m) depth layer, a total of 67 BIAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold.

Scenario 2 – 22,747 m³ Loss of Well Control from Mulloway

- The maximum distance from the release location to the low (≥ 1 g/m²) and moderate (≥ 10 g/m²) floating oil exposure levels was 351.8 km (northeast) and 28.9 km (west-southwest), respectively. No floating oil exposure at the high (≥ 50 g/m²) threshold was predicted.
- A total of 27 BIAs were predicted to be exposed to floating oil at, or above, the low threshold.
- The probability of contact to any shoreline at, or above, the low threshold (≥ 10 g/m²) was 100% and the minimum time before shoreline contact at, or above, the low threshold was 1.79 days. The maximum volume ashore for a single spill trajectory was 1,048.2 m³ and the maximum length of shoreline contacted at the low threshold was 361.0 km. Additionally the maximum length of shoreline contacted at the moderate (≥ 100 g/m²) threshold and high ($\geq 1,000$ g/m²) shoreline thresholds was 132.0 km and 26.0 km, respectively.

REPORT

- The shoreline assessment identified a total of 4 Ramsar areas, 42 LGAs and 35 Sub-LGAs predicted to experience shoreline accumulation at, or above, the low threshold.
- The maximum distances to the low (≥ 10 ppb), moderate (≥ 50 ppb) and high (≥ 400 ppb) dissolved hydrocarbon thresholds from release location were predicted to be 1,500 km (northeast), 1,130 km (east-northeast) and 489 km (east), respectively.
- In the surface (0-10 m) depth layer, a total of 51 BIAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold.
- The maximum distance to the low (≥ 10 ppb) and high (≥ 100 ppb) entrained hydrocarbon thresholds from the release location was 1,507 km (east-northeast) and 919 km (east-northeast), respectively.
- In the surface (0-10 m) depth layer, a total of 56 BIAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold.

1 INTRODUCTION

1.1 Background

Esso Australia Pty Ltd (Esso) is planning to plug and abandon (P&A) 21 non-producing platform wells and 5 subsea wells in the Gippsland Basin, off the Victorian coastline.

In order to support the development of Environmental Plan (EP) and Oil Pollution Emergency Plan (OPEP), Esso commissioned RPS to undertake a detailed oil spill modelling study assessing the following hypothetical scenarios:

- **Scenario 1:** A 61,544 m³ (405,575 bbl) surface release of West Kingfish crude (analogue) over 98 days following a loss of well control at the Whiptail well location; and
- **Scenario 2:** A 22,747 m³ (149,903 bbl) surface release of Halibut crude (analogue) over 98 days following a loss of well control at the Mulloway well location.

Table 1-1 presents the coordinates of the release locations, also illustrated in Figure 1-1.

The results for each scenario are presented on an annual basis.

The purpose of the modelling is to provide an understanding of a conservative ‘outer envelope’ of the Potentially Exposed Area (PEA) that may be affected in the unlikely event of hydrocarbon spill during the proposed P&A activities. 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 that the released hydrocarbon may influence.

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 F2067-13 “*Standard Practice for Development and Use of Oil Spill Models*”.

Table 1-1 Coordinates for the release locations used in this study (WGS84).

Scenario	Release Location	Latitude	Longitude	Depth (m BMSL)
1	Whiptail	38° 19' 24.87"S	147° 31' 14.96"E	~25
2	Mulloway	38° 19' 24.25"S	147° 29' 1.79"E	~25

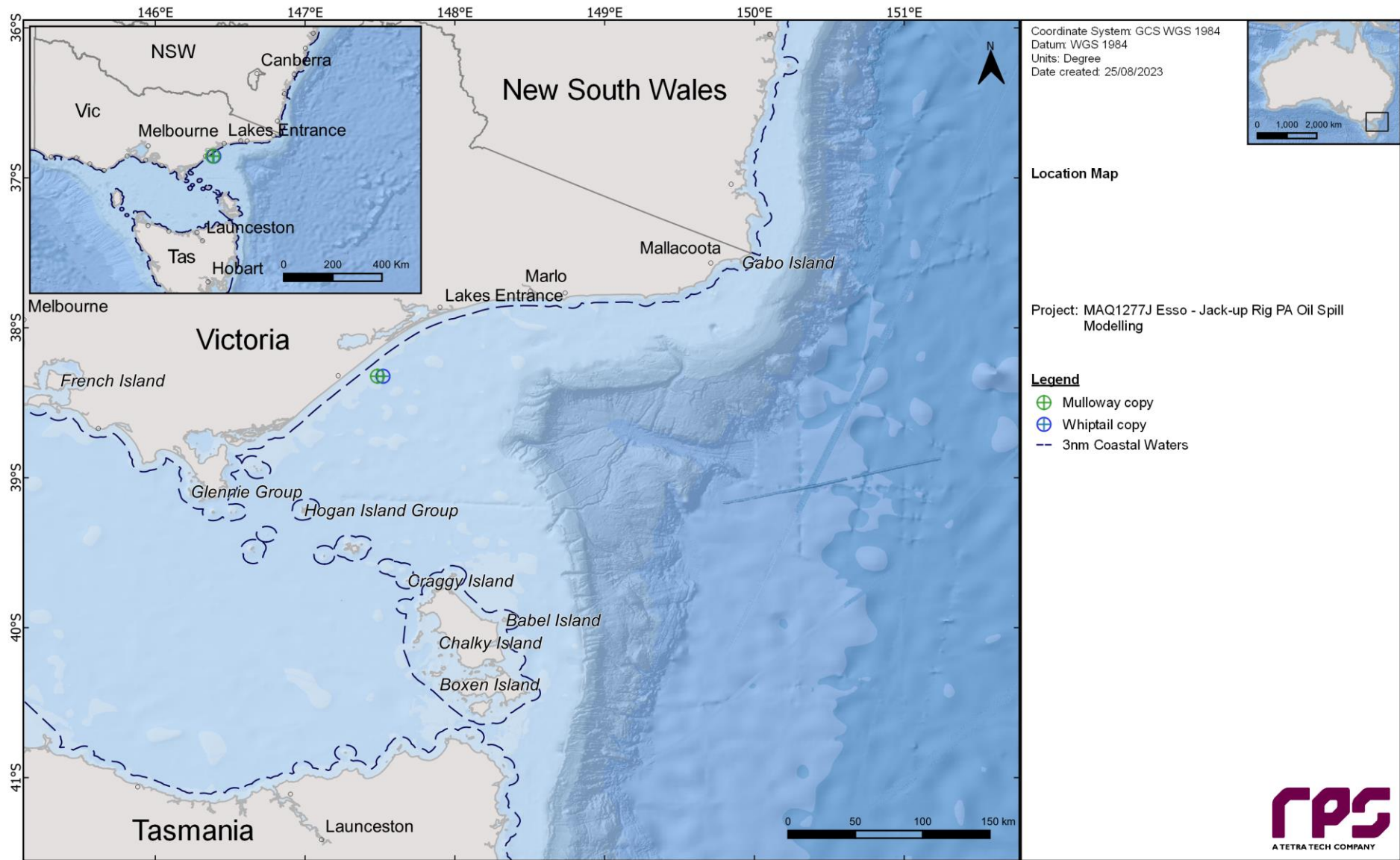


Figure 1-1 Map of the well locations used in this study.

1.1 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 1.1.1) and deterministic (Section 1.1.2) modelling.

1.1.1 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 considers the inherent uncertainty and variability associated with oil spills, such as the randomness of spill occurrence, weather conditions, and environmental factors.

Stochastic modelling aims to predict the movement and fate of spilled oil in water bodies, estimate the potential areas affected, and assess the environmental and economic impacts.

Overall, oil spill stochastic modelling provides a valuable tool for understanding and managing the complex dynamics of oil spills, aiding in emergency preparedness, response planning, and mitigation efforts.

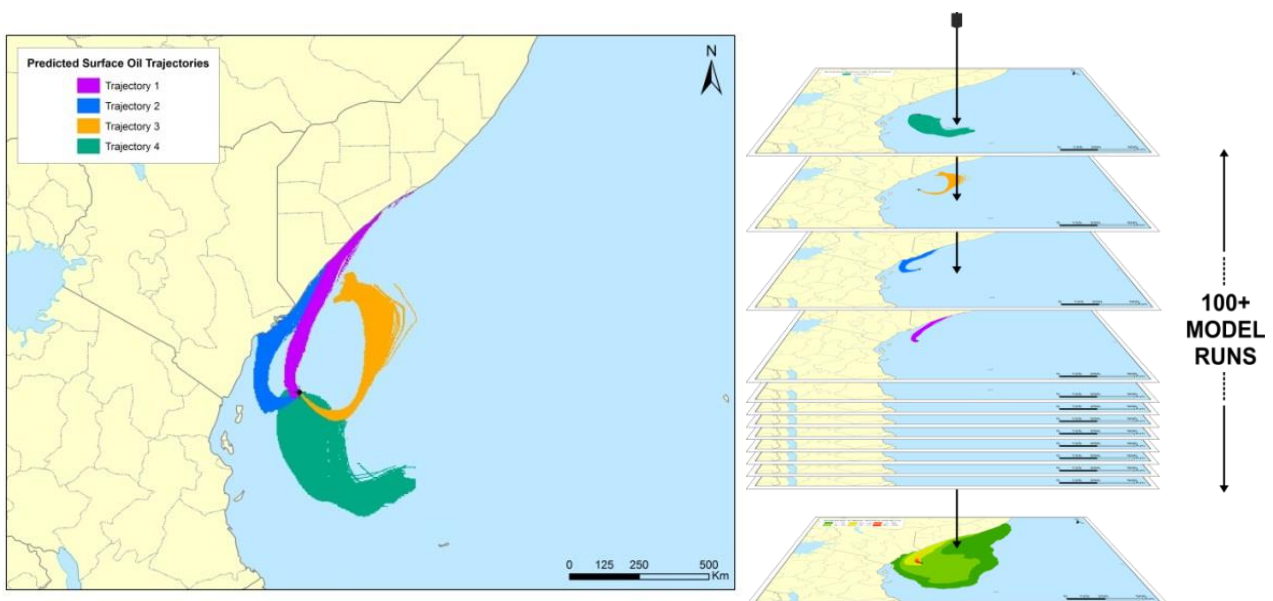


Figure 1-2 Examples of four individual spill trajectories (four replicate simulations) predicted by SIMAP for a spill scenario. The frequency of contact with given locations is used to calculate the probability of impacts during a spill. Essentially, all model runs are overlain (shown as the stacked runs on the right) and the number of times that trajectories contact a given location at a concentration is used to calculate the probability.

1.1.2 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 and is often paired with stochastic modelling to place the large stochastic footprint into perspective. Unlike stochastic modelling, which incorporates randomness and probability, deterministic modelling focuses on accurately predicting the outcome of an oil spill based on known or assumed parameters. Figure 1-3 presents an example of a single spill simulation illustrating maximum swept area and shoreline loading.

Deterministic modelling provides a detailed understanding of the potential trajectory and behaviour of an oil spill. It can help predict the areas likely to be impacted, identify vulnerable ecosystems or resources at risk, and estimate the potential spread and thickness of the oil slick. Deterministic models are particularly useful for evaluating response strategies, optimising resource allocation, and assessing the effectiveness of different spill mitigation measures.

Deterministic spills can be selected on several basis such as minimum time to shoreline, largest swept area of floating oil, maximum volume ashore, longest length of shoreline contacted by oil or largest area of entrained or dissolved hydrocarbons.

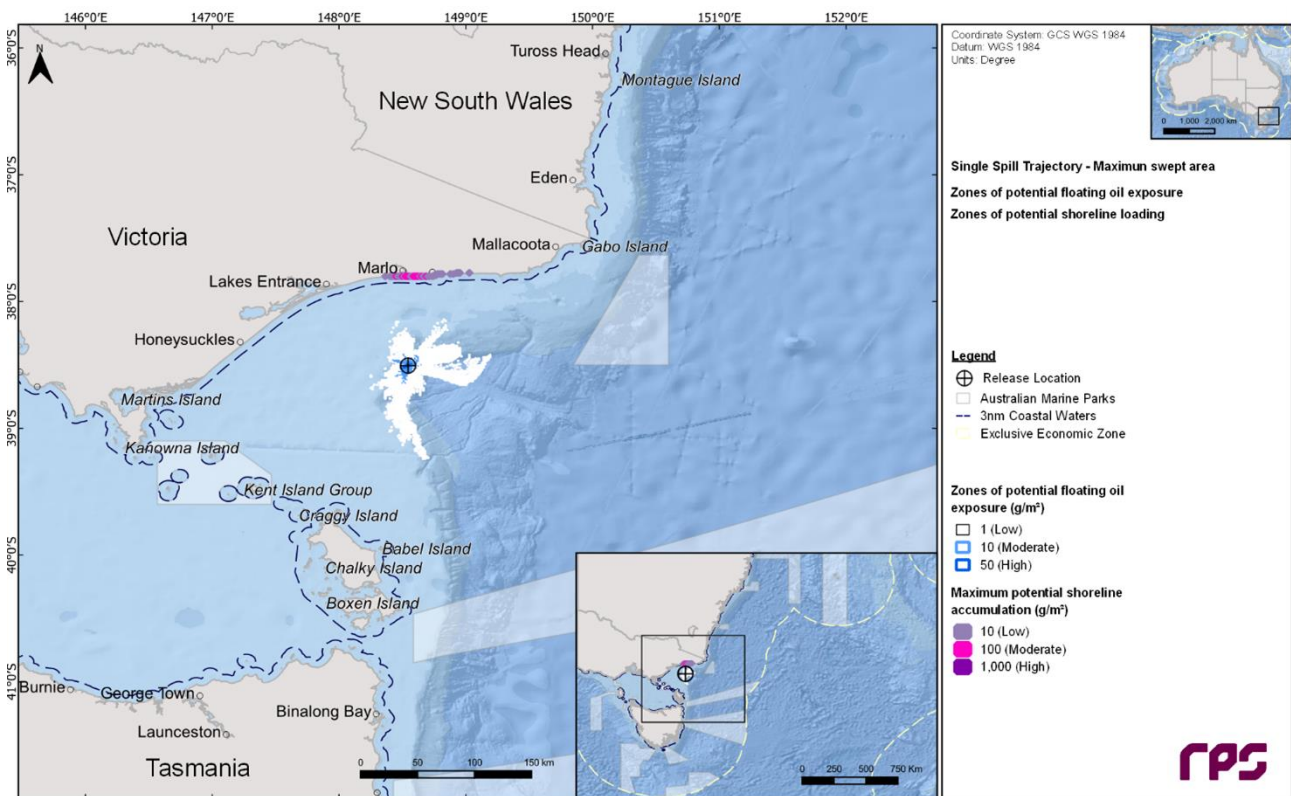


Figure 1-3 Example of an individual spill trajectory representing the maximum swept area and shoreline loading.

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 different crude oils used 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, 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; and
- The stochastic modelling results were reviewed for each scenario and the "worst case" deterministic runs were identified and presented based on the following criteria (if applicable):
 - a. Largest swept area of floating oil above 10 g/m²;
 - b. Minimum time before shoreline accumulation above 10 g/m²;
 - c. Largest volume of oil ashore;
 - d. Longest length of oil accumulation above 100 g/m²;
 - e. Largest area of entrained hydrocarbon exposure above 100 ppb; and
 - f. Largest area of dissolved hydrocarbon exposure above 50 ppb.

3 REGIONAL CURRENTS

The Gippsland Basin lies within the eastern portion of the Bass Strait, a sea strait separating Tasmania from the southern Australian mainland. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. 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. During winter, the South Australian current moves dense, salty water eastward from the Great Australian Bight into the western margin of the Bass Strait (Sandery and Kämpf, 2007). 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 (Baines and Fandry, 1983; Middleton and Black, 1994).

Figure 3-1 displays seasonal current trends within the Gippsland Basin-Bass Strait region. 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 through 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, traveling eastward as the coastal current develops due to south-easterly winds.

To accurately describe the variability in currents between the inshore and offshore regions, 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.

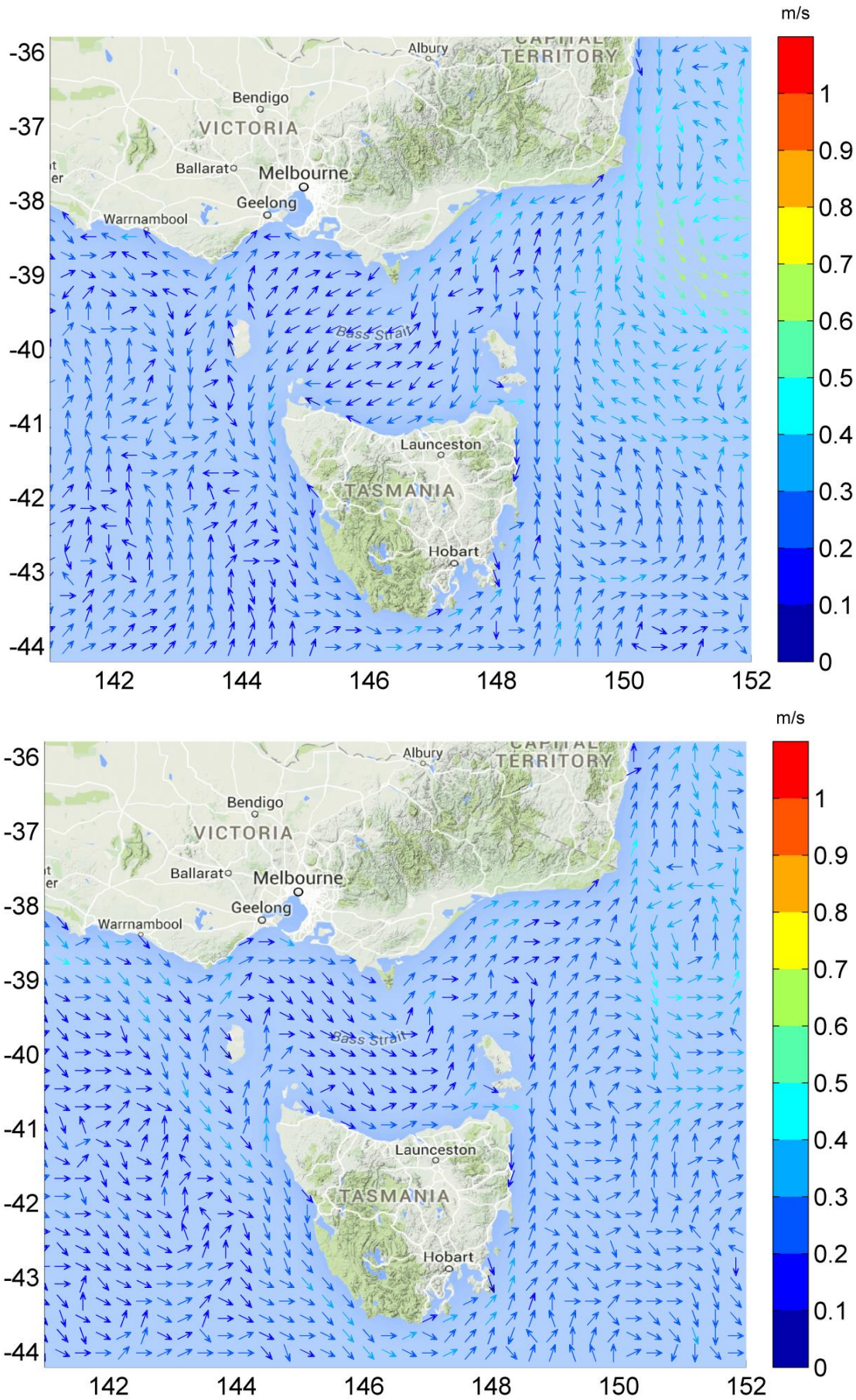


Figure 3-1 HYCOM averaged seasonal surface drift currents during summer (upper image) and winter (lower image).

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).

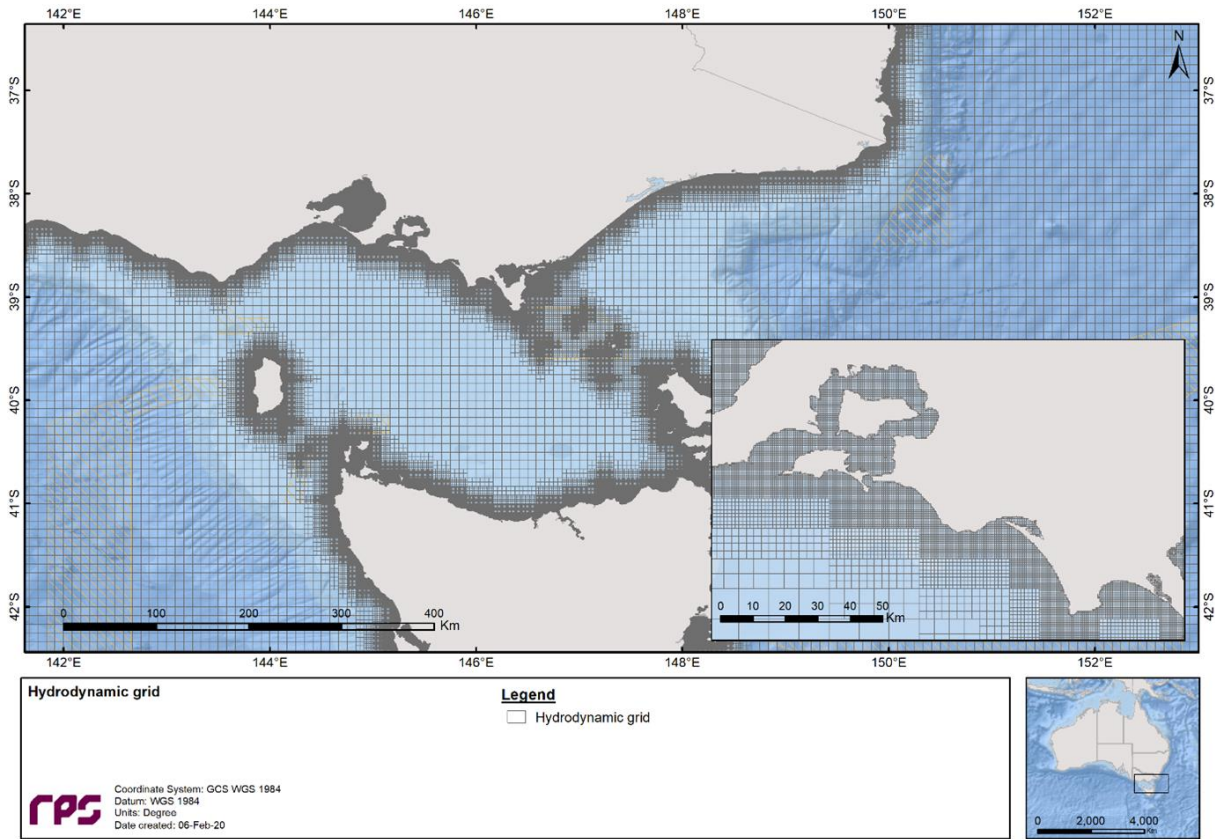


Figure 3-2 Sample of the model grid used to generate the tidal currents for the study region. Higher resolution areas are shown by the denser mesh.

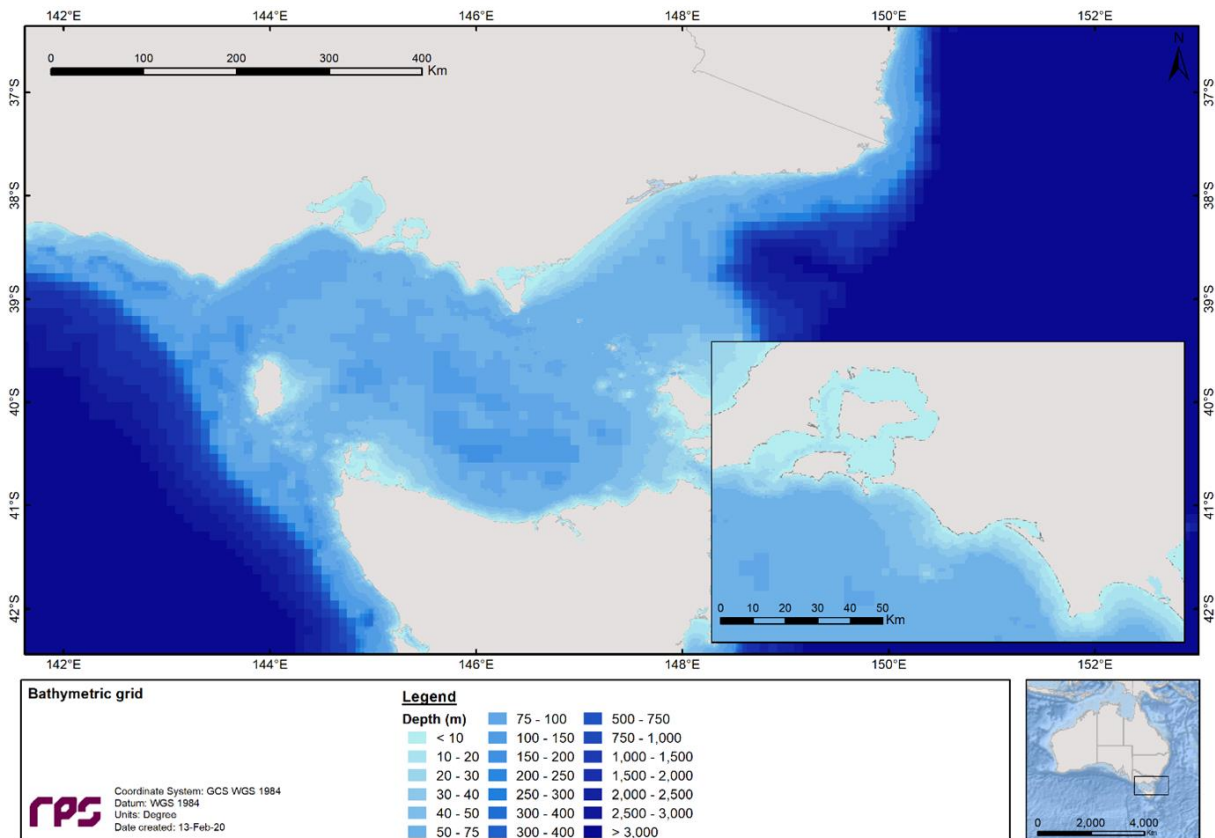


Figure 3-3 Bathymetry defined throughout the tidal model domain.

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 referenced 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:

$$MAE = N^{-1} \sum_{i=1}^N |P_i - O_i| \quad \text{Eq.1}$$

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 (Willmott, 1981). Willmott et al. (1985) also suggests that values larger than 0.5 may represent good model performance. The IOA is determined by:

$$IOA = 1 - \frac{\sum |X_{model} - X_{obs}|^2}{\sum (|X_{model} - \bar{X}_{obs}| + |X_{obs} - \bar{X}_{obs}|)^2} \quad \text{Eq. 2}$$

Where: X_{model} = Model predicted surface elevation

X_{obs} = Observed surface elevation

Clearly, a greater IOA and lower MAE represent a better model performance.

REPORT

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

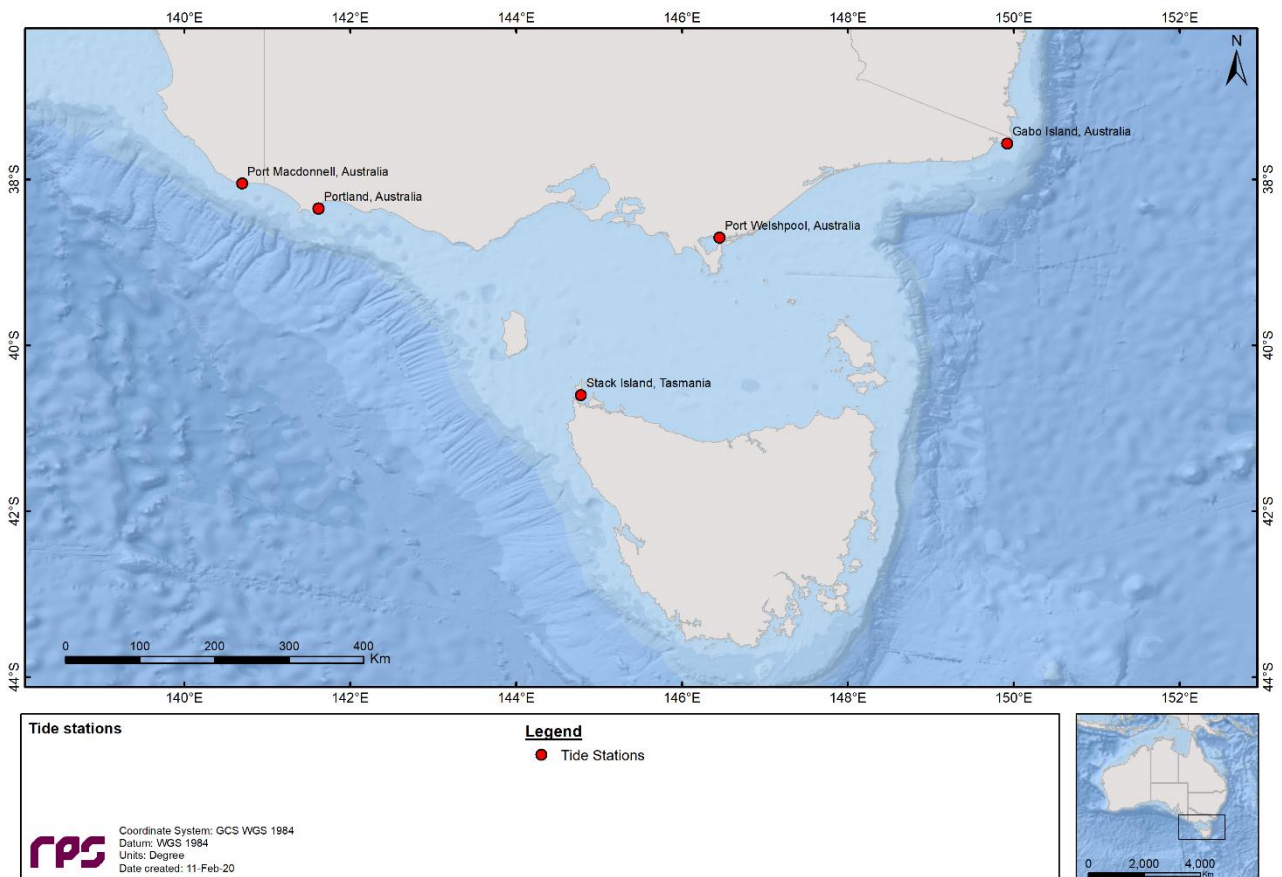


Figure 3-4 Location of the tide stations used in the surface elevation validation.

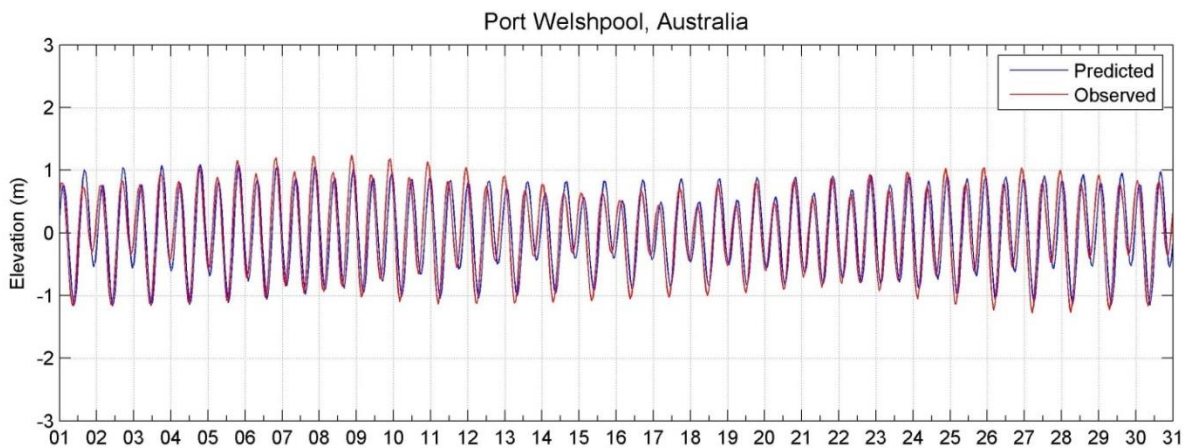
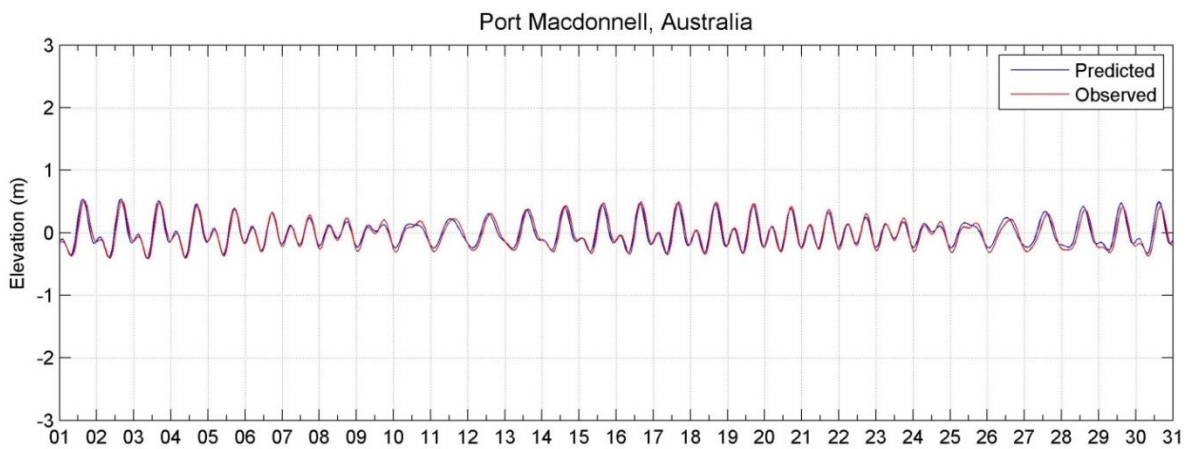
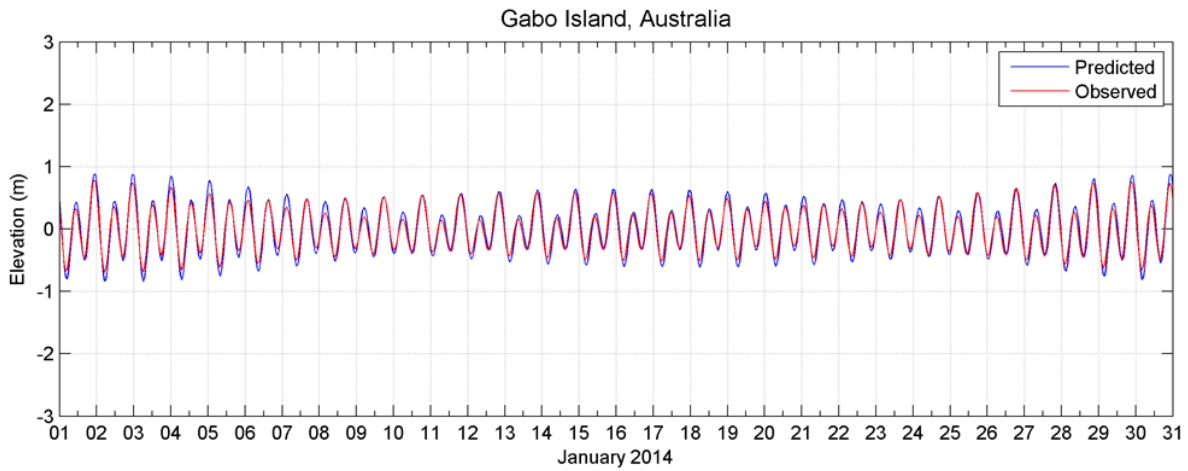


Figure 3-5 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Gabo Island (upper image), Port MacDonnell (middle image) and Port Welshpool (lower image).

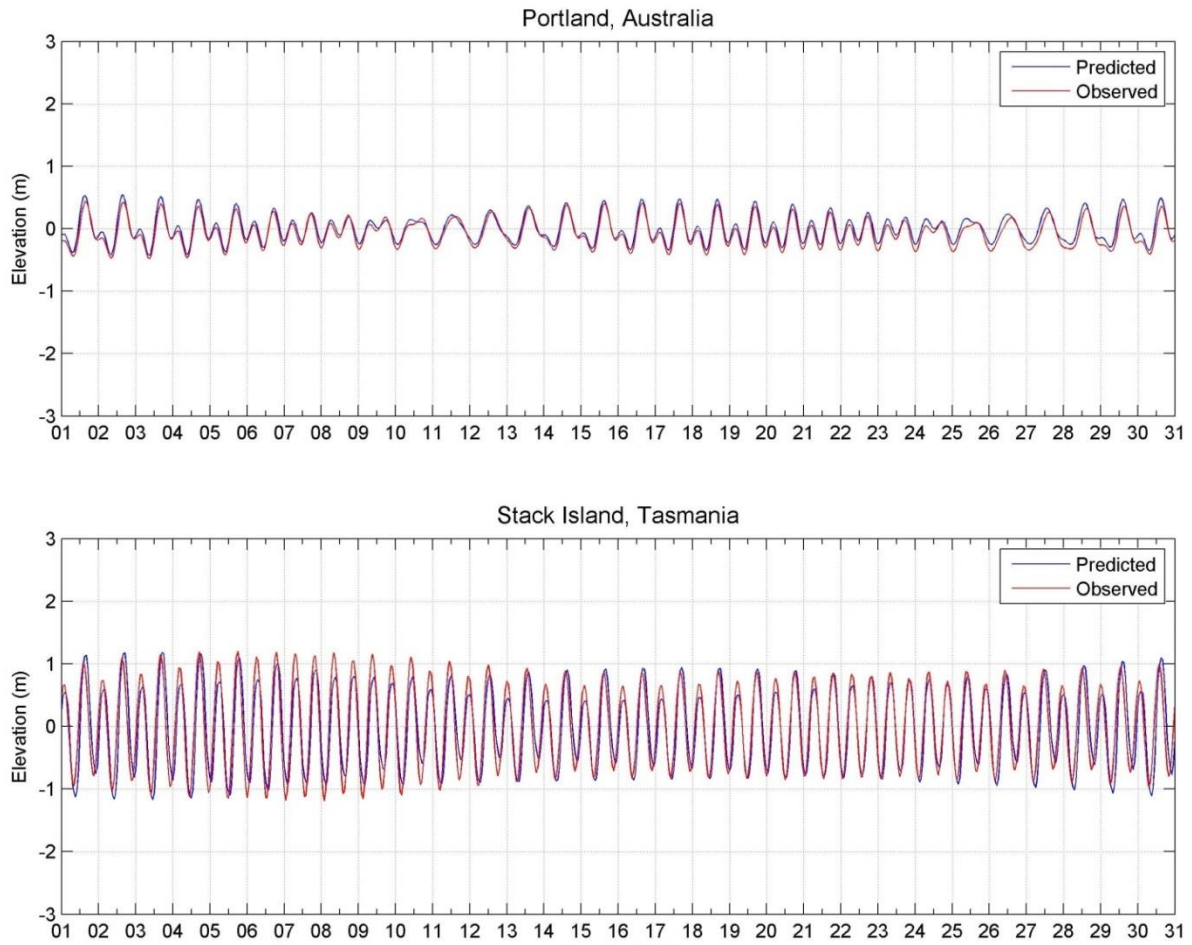


Figure 3-6 Comparison between HYDROMAP predicted (blue line) and observed (red line) surface elevation at tidal stations Portland (upper image) and Stack Island (lower image).

3.2 Ocean Currents

Data describing the flow of ocean currents was for the years 2010 to 2019 (inclusive) 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 every three hours. 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. Figure 3-7 illustrates the spatial resolution of HYCOM currents.

For this study, the HYCOM hindcast currents were obtained.

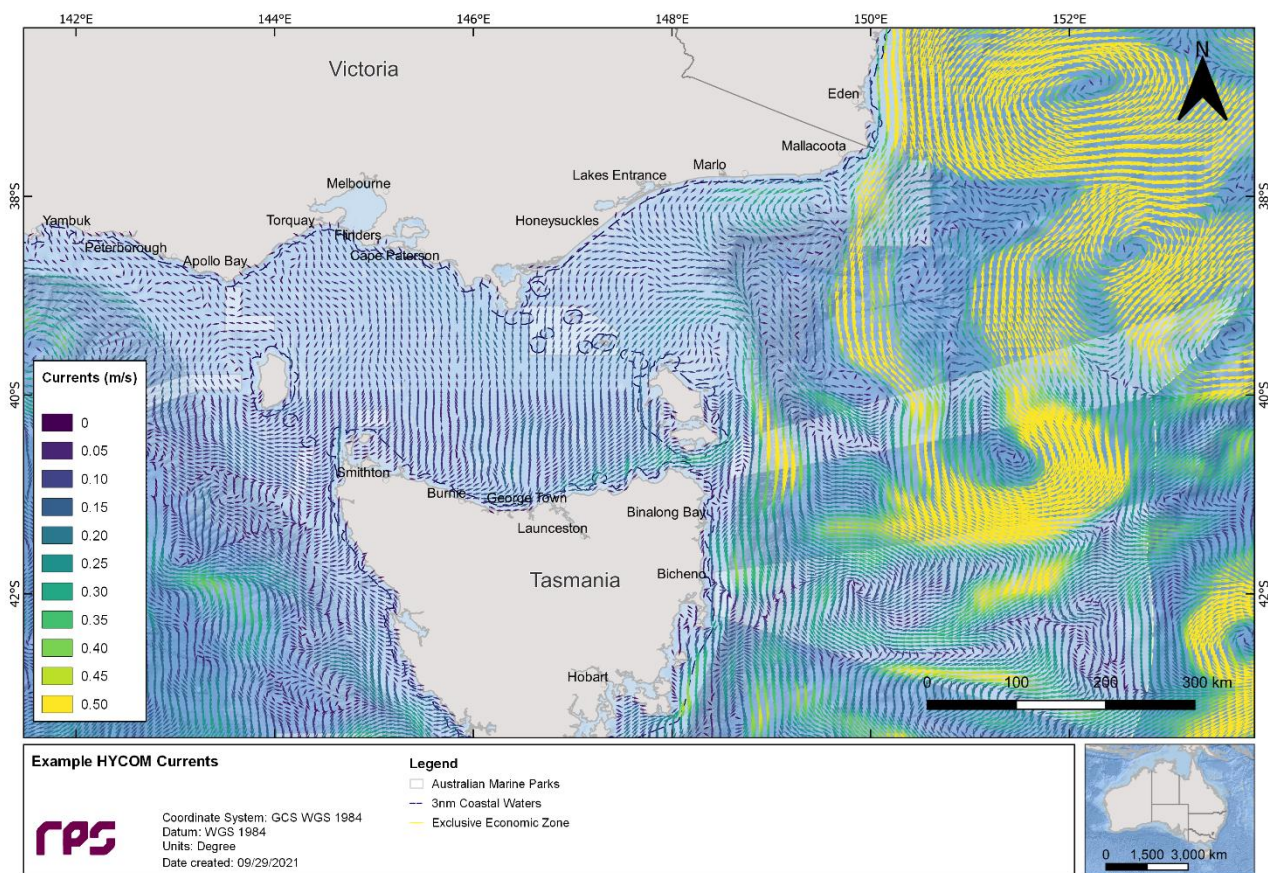


Figure 3-7 Map illustrating the spatial resolution of HYCOM currents.

3.3 Surface Currents

Table 3-2 presents the average and maximum net surface current speeds nearby the Whiptail and Mulloway release locations, by combining the ocean and tidal currents. Current speeds varied throughout the year with peak monthly current speeds ranging between 0.93 m/s (April) and 1.36 m/s (July). The dominant current directions were northeast and southwest from October to April, while currents tended more northeast from May to September.

Figure 3-8 and Figure 3-9 show the monthly and total surface current rose distributions nearby the Whiptail and Mulloway release 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.

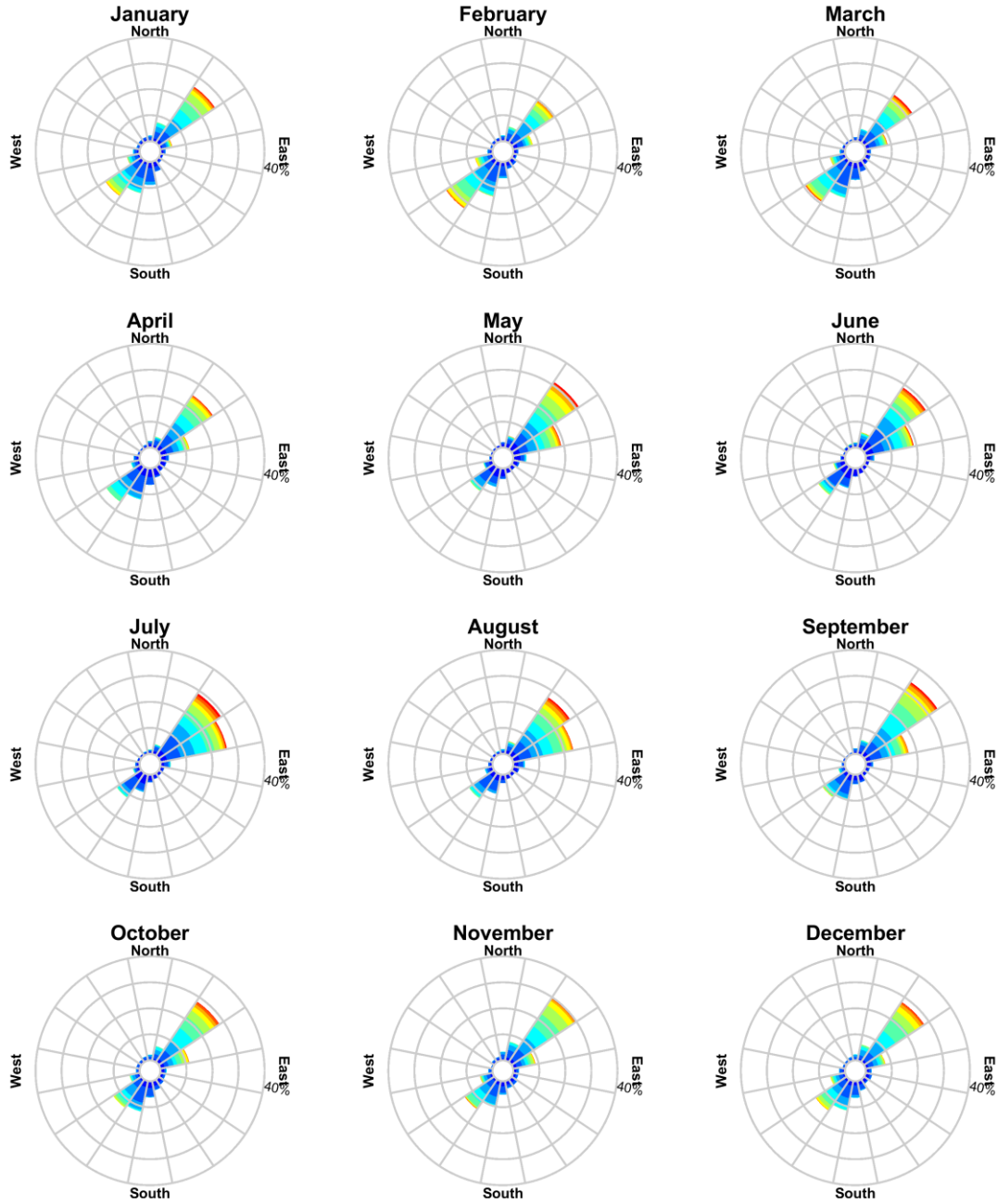
Table 3-2 Predicted monthly average and maximum surface current speeds nearby the Whiptail and Mulloway release locations. The data was derived by combining the HYCOM ocean data and HYDROMAP tidal data from 2010–2019 (inclusive).

Month	Average current speed (m/s)	Maximum current speed (m/s)	General direction(s) (Towards)
January	0.25	1.01	Northeast and Southwest
February	0.25	0.99	Northeast and Southwest
March	0.24	1.22	Northeast and Southwest
April	0.21	0.93	Northeast and Southwest
May	0.25	1.26	Northeast
June	0.23	1.20	Northeast
July	0.25	1.36	Northeast
August	0.25	1.20	Northeast
September	0.27	1.29	Northeast
October	0.25	1.05	Northeast and Southwest
November	0.26	1.21	Northeast and Southwest
December	0.27	1.30	Northeast and Southwest
Minimum	0.21	0.93	
Maximum	0.27	1.36	

RPS Data Set Analysis

Current Speed (m/s) and Direction Rose (All Records)

Longitude = 147.52°E, Latitude = 147.48°N
 Analysis Period: 01-Jan-2010 to 31-Dec-2019



Color Key [Current Speed(m/s)] :



Figure 3-8 Monthly surface current rose plots nearby the Whiptail and Mulloway release locations (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive)).

RPS Data Set Analysis

Current Speed (m/s) and Direction Rose (All Records)

Longitude = 147.52°E, Latitude = 147.48°N
 Analysis Period: 01-Jan-2010 to 31-Dec-2019

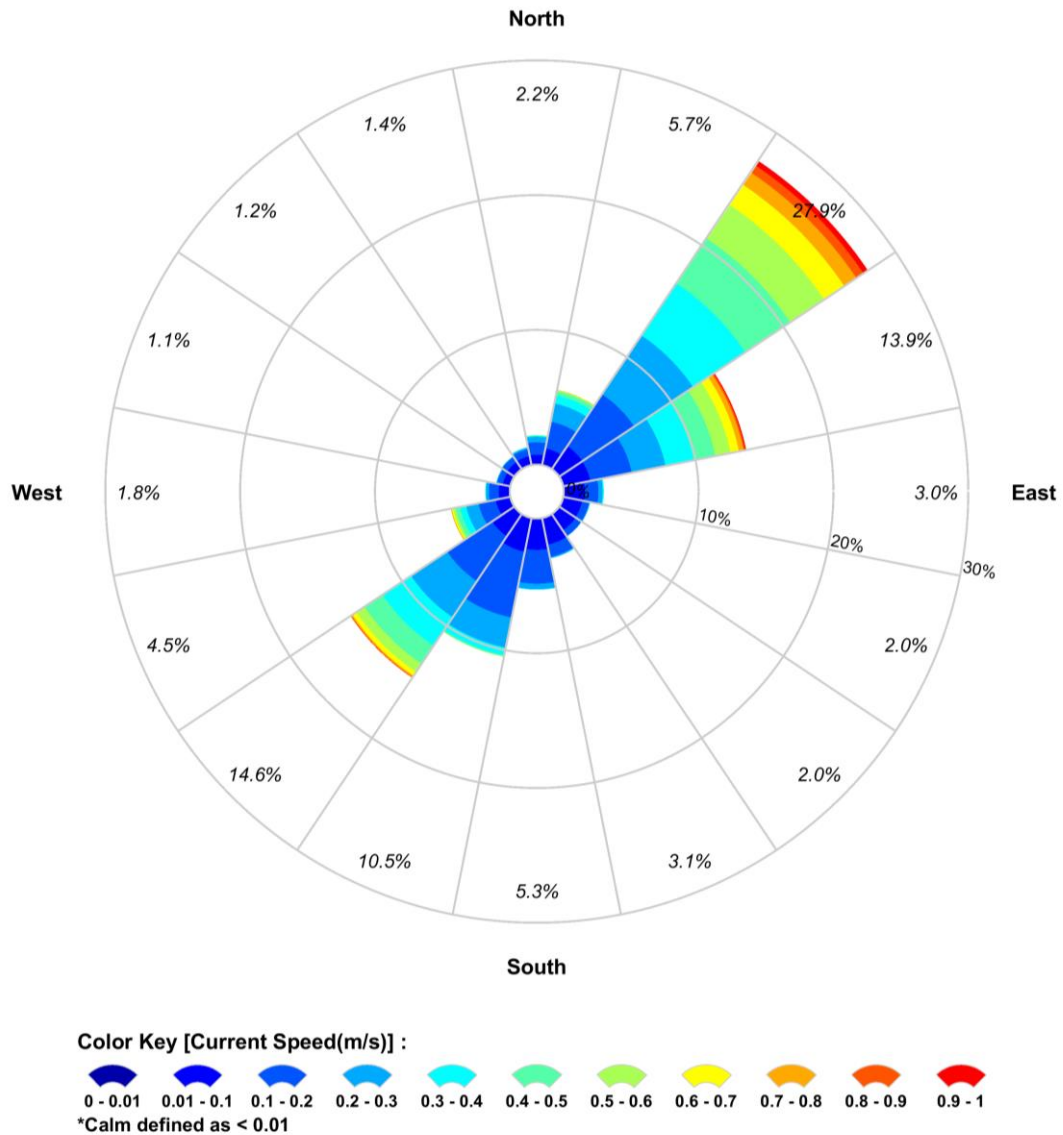


Figure 3-9 Total surface current rose plot nearby the Whiptail and Mulloway release locations (derived by combining the HYDROMAP tidal currents and HYCOM ocean currents for 2010–2019 (inclusive)).

4 WIND DATA

High resolution wind data for the years 2010–2019 (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 Whiptail and Mulloway release locations. The wind data nearby the release locations demonstrated average monthly wind speeds ranging from 5.5 knots (April) to 6.9 knots (July–September) with monthly maximums ranging between 18.4 knots (October) and 23.5 knots (June). The wind direction nearby both locations between December to March was typically dominated by west-southwest and northeast winds, whilst winds predominantly blew from the west during the remaining months of the year.

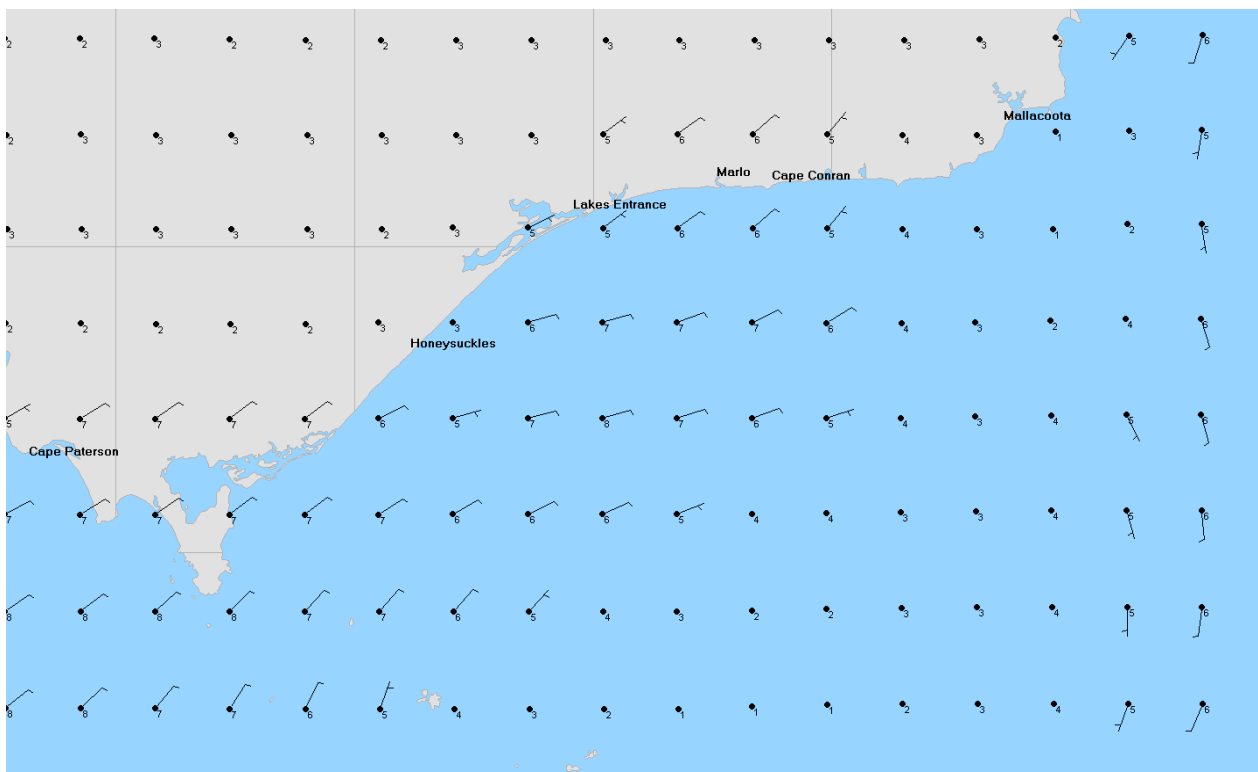


Figure 4-1 Spatial resolution of the CFSR modelled wind data used as input into the oil spill model.

Figure 4-2 and Figure 4-3 presents the monthly and total wind rose distributions derived from the CFSR data for the nearest wind node to the Whiptail and Mulloway 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 2 knots are predominantly 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.

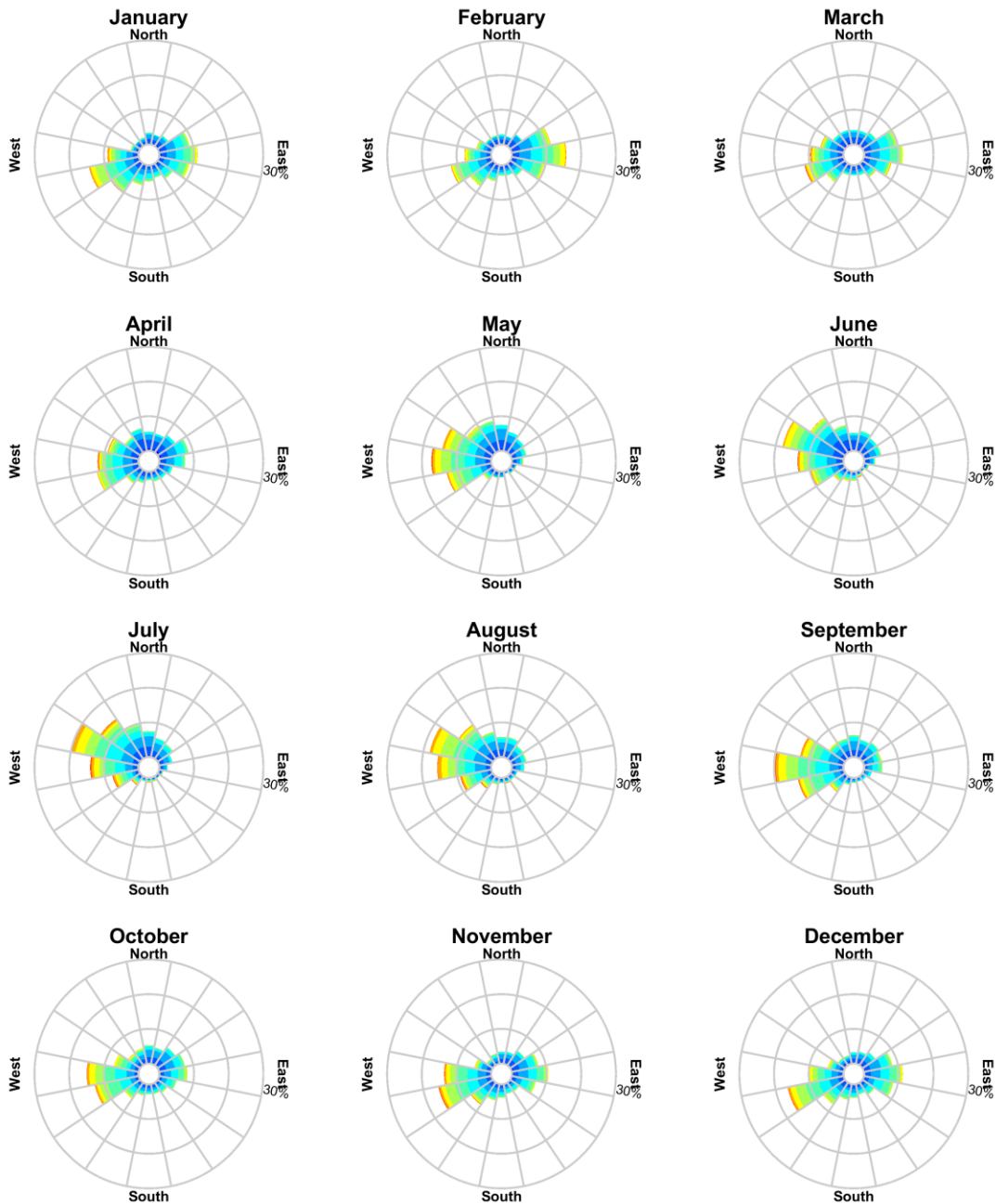
Table 4-1 Predicted average and maximum winds for the representative wind station nearby the Whiptail and Mulloway release locations. Data derived from CFSR hindcast model from 2010–2019 (inclusive).

Month	Average wind speed (knots)	Maximum wind speed (knots)	General direction (From)
January	6.4	19.6	West-southwest and Northeast
February	6.3	21.9	West-southwest and East
March	6.0	19.8	West-southwest and East
April	5.5	21.2	West
May	6.5	22.8	West
June	6.2	23.5	West-northwest
July	6.9	19.9	West-northwest
August	6.9	19.8	West-northwest
September	6.9	22.9	West
October	6.6	18.4	West
November	6.6	21.8	West
December	6.5	19.0	West-southwest
Minimum	5.5	18.4	
Maximum	6.9	23.5	

RPS Data Set Analysis

Wind Speed (knots) and Direction Rose (All Records)

Longitude = 147.52°E, Latitude = 147.48°N
 Analysis Period: 01-Jan-2010 to 31-Dec-2019



Color Key [Wind Speed (knots)] :



Figure 4-2 Modelled monthly wind rose distributions from 2010–2019 (inclusive), for the representative wind node nearby the Whiptail and Mulloway release locations.

RPS Data Set Analysis

Wind Speed (knots) and Direction Rose (All Records)

Longitude = 147.52°E, Latitude = 147.48°N
 Analysis Period: 01-Jan-2010 to 31-Dec-2019

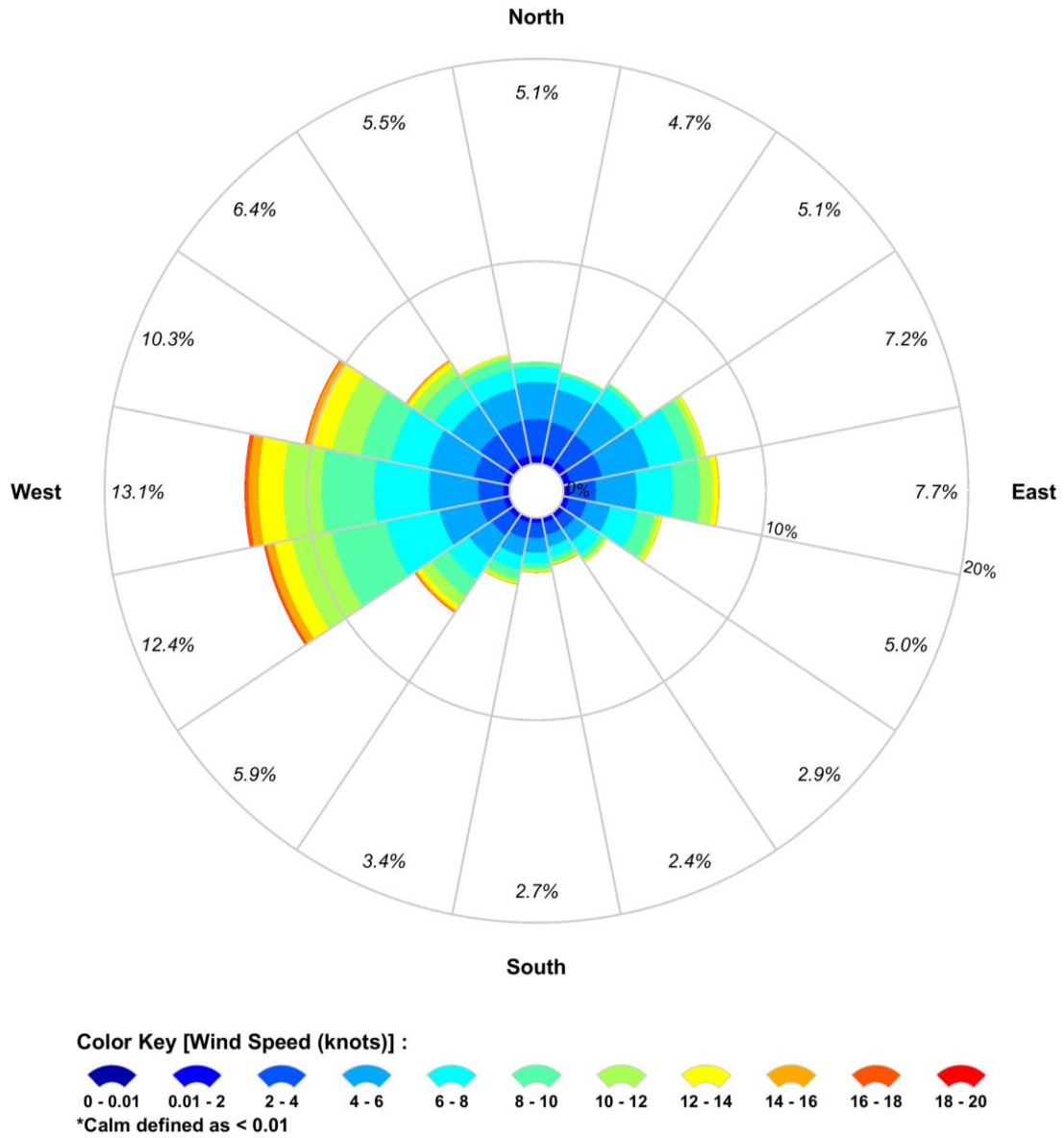


Figure 4-3 Modelled total wind rose distributions from 2010–2019 (inclusive), for the representative wind node nearby the Whiptail and Mullet release locations.

5 WATER TEMPERATURE AND SALINITY

The monthly sea temperature and salinity profiles of the water column nearby the Whiptail and Mulloway release locations 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; NCEI, 2021). 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 illustrates the vertical profile of sea temperature and salinity nearby Whiptail and Mulloway release locations.

Table 5-1 presents the sea temperature and salinity of the surface layer nearby the Whiptail and Mulloway release locations. The monthly average sea surface temperatures ranged between 12.3°C (September) and 19.7°C (January). The monthly average salinity values remain relatively consistent ranging between 35.4 and 35.6 psu.

Table 5-1 Monthly average sea surface temperature and salinity nearby the Whiptail and Mulloway release locations.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	19.7	19.5	19.5	18.3	16.2	14.7	13.3	12.5	12.3	13.5	15.8	17.3
Salinity (psu)	35.5	35.4	35.4	35.5	35.6	35.6	35.5	35.4	35.4	35.4	35.4	35.4

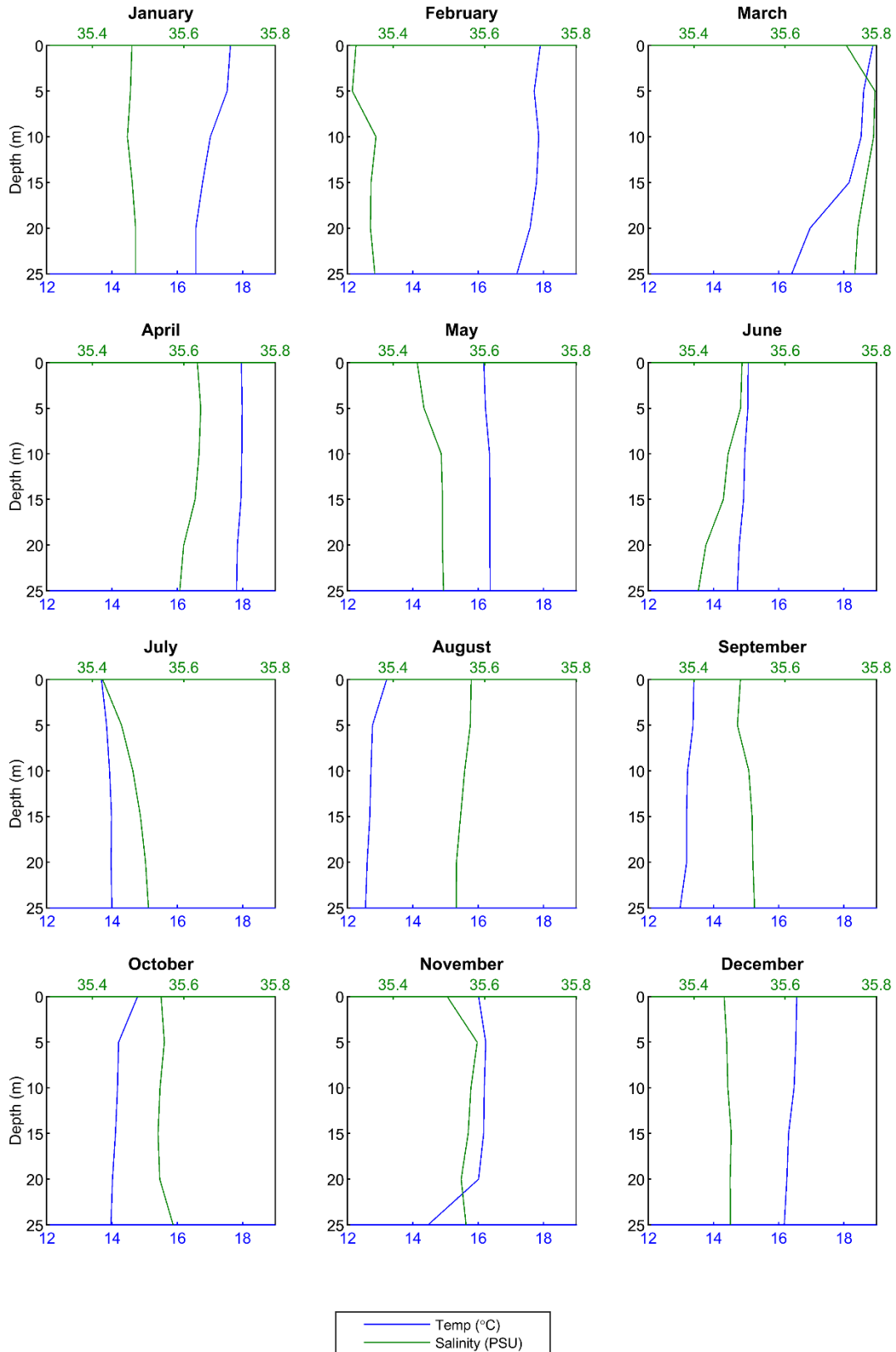


Figure 5-1 Temperature and salinity profiles nearby the Whiptail and Mulloway release locations.

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 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 each scenario using the same spill information (release location, spill volume, duration and oil type) but with varied start dates and times corresponding to the period represented by the available wind and current data. 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 annualised 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 strand 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.

6.1 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 6.1.1 to 6.1.3. Supporting justifications of the adopted thresholds applied during the study and additional context relating to the area of influence are also provided. It is important to note that the thresholds herein are based on NOPSEMA (2019).

6.1.1 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/m², 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/m² (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/m² (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/m² 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

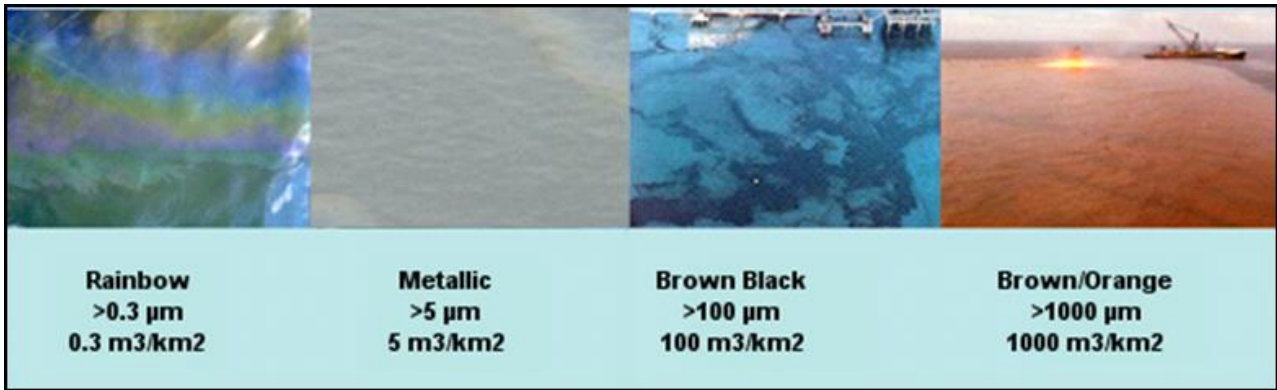


Figure 6-1 Photographs showing the difference between oil colour and thickness on the sea surface (source: adapted from Oil Spill Solutions, 2015).

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

6.1.2 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/m² 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/m² 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/m², 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/m², 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/m² has been selected to define the zone of potential “moderate shoreline accumulation”.

Observations by Lin & Mendelsohn (1996) demonstrated that loadings of more than 1,000 g/m² 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/m² 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 concentration (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

6.1.3 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.

6.1.3.1 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 (LC₅₀) 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).

6.1.3.2 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 and 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 and 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).

Threshold level	Dissolved hydrocarbon concentration (ppb)	Entrained hydrocarbon concentrations (ppb)
Low	10	10
Moderate	50	-
High	400	100

7 OIL PROPERTIES

7.1 Oil Characteristics

7.1.1 Overview

The physical properties and boiling point distributions for West Kingfish crude used for scenario 1 and Halibut crude used for scenario 2 are presented in Table 7-1 and Table 7-2, respectively.

Table 7-1 Physical properties for the crude oils used in the study.

Characteristic	West Kingfish Crude	Halibut Crude
Density (kg/m ³)	798.1.0 (at 15°C)	821.5 (at 15 °C)
API	45.7	40.6
Dynamic viscosity (cP)	2.0 (at 20°C)	2.97 (at 15 °C)
Pour point (°C)	9	0
Wax content (%)	25.0	23.7
Aromatic content (%)	23.0	23.2
Hydrocarbon property group	Group II	Group II
Hydrocarbon property classification	Light-persistent	Light-persistent

Table 7-2 Boiling point ranges for the crude oils used in the study.

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
West Kingfish Crude	% of total	18.8	24.4	38.7	18.1
Halibut Crude		15.2	25.6	41.6	17.6

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 C₄ to C₁₀ compounds (or less than 180°C BP).
- Up to 24 hours for the C₁₁ to C₁₅ compounds (180-265°C BP).
- Several days for the C₁₆ to C₂₀ compounds (265-380°C BP).
- 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.

The actual fate of oil will depend greatly on the amount that reaches the surface.

7.1.2 West Kingfish Crude Oil

The West Kingfish crude oil (as the analogue for Whiptail) has an API of 45.7 and a density of 798.1 kg/m³ (at 15°C) with a viscosity value (2.0 cP at 15°C) classifying it as a Group II (light-persistent) oil according to the ITOPF (2014) classification scheme.

The crude is a mixture of volatile and persistent hydrocarbons with high proportions of low-volatile residual components. In favourable evaporation conditions, 18.8% of the oil mass should evaporate within the first 12 hours (BP < 180°C); a further 24.4% should evaporate within the first 24 hours (180°C < BP < 265°C); and a further 38.7% should evaporate over several days (265°C < BP < 380°C). Furthermore, 18.1% of the oil is shown to be persistent.

The whole oil has a high wax content (25.0%), indicating that surface slicks of the crude are likely to form waxy flakes in the environment as it weathers over time.

Soluble, aromatic, hydrocarbons contribute approximately 23.0% by mass of the whole oil. The fate of this component, which include the BTEX compounds, will vary depending on the release conditions and subsequent setting. Surface discharge will inhibit the process of dissolution, with compounds tending to evaporate from the water into the atmosphere.

7.1.3 Halibut Crude Oil

The Halibut crude oil (as the analogue for Mulloway) has an API of 40.6 and a density of 821.5 kg/m³ (at 15°C) with a viscosity value (2.97 cP at 15°C) classifying it as a Group II (light-persistent) oil according to the ITOPF (2014) classification scheme.

The crude oil is a mixture of volatile and persistent hydrocarbons with high proportions of low-volatile residual components. In favourable evaporation conditions, 15.2% of the oil mass should evaporate within the first 12 hours (BP < 180°C); a further 25.6% should evaporate within the first 24 hours (180°C < BP < 265°C); and a further 41.6% should evaporate over several days (265°C < BP < 380°C). Furthermore, 17.6% of the oil is shown to be persistent.

The whole oil has a high wax content (23.7%), indicating that surface slicks of Halibut crude are likely to form waxy flakes in the environment as it weathers over time.

Soluble, aromatic, hydrocarbons contribute approximately 23.2% by mass of the whole oil. The fate of this component, which include the BTEX compounds, will vary depending on the release conditions and subsequent setting. Surface discharge will inhibit the process of dissolution, with compounds tending to evaporate from the water into the atmosphere.

7.2 Weathering Characteristics

7.2.1 Overview

A series of model weather tests were conducted to illustrate the potential behaviour of the crude oils used in this study when exposed to idealised and representative environmental conditions:

- A 50 m³ 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 m³ surface release over 1-hour under variable wind conditions (1-12 knots, drawn from representative data files), assuming low seasonal water temperature (15°C) and ambient tidal and drift currents.

The first case is indicative of conditions that would not generate entrainment, while the second case may represent conditions that could cause a minor degree of entrainment. Both scenarios provide examples of potential behaviour during a spill once the oil reaches the surface.

7.2.2 West Kingfish Crude Mass Balance Forecasts

The mass balance for West Kingfish crude under the constant 5 knot wind case (Figure 7-1) shows that 37.8% of the oil is predicted 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 longer-chain compounds with higher boiling points. 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 West Kingfish crude into the water column is predicted to increase. Approximately 24 hours after the spill, 52.2% of the oil mass is forecast to have entrained and a further 29.5% is forecast to have evaporated, leaving only a small proportion of the oil floating on the water surface (<2.0%).

The increased level of entrainment in the variable-wind case result in a higher percentage decaying at an approximate rate of 2.7% per day with an accumulated total of ~18.9% after 7 days, compared to 0.2% per day and a total of 1.4% 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.

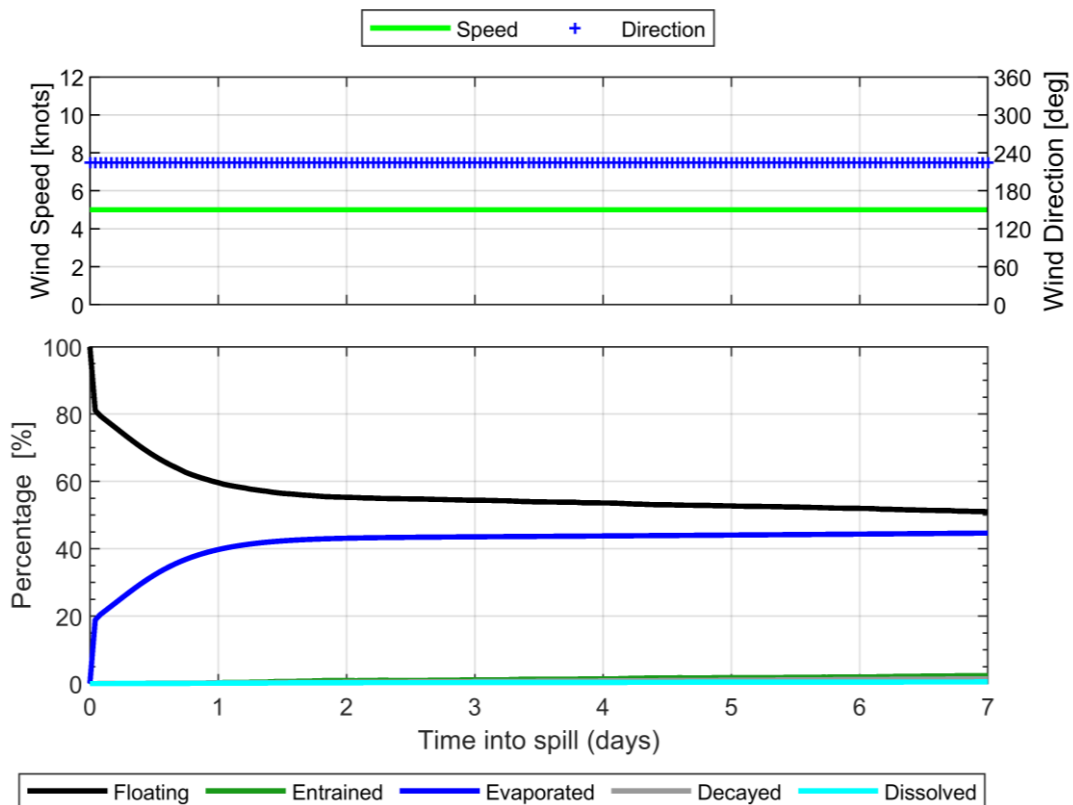


Figure 7-1 Proportional mass balance plot representing the weathering of West Kingfish crude spilled onto the water surface over 1 hour and subject to a constant 5 knots wind speed at 15°C water temperature and 20°C air temperature.

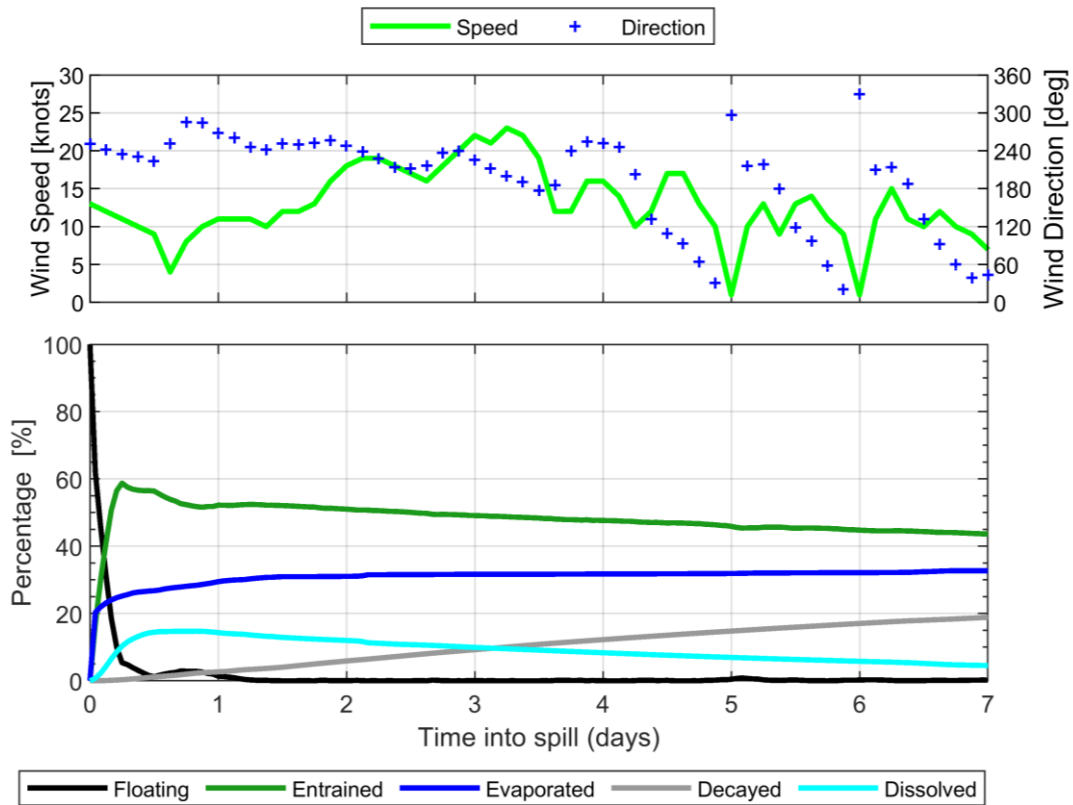


Figure 7-2 Proportional mass balance plot representing the weathering of West Kingfish crude spilled onto the water over 1 hour and subject to variable wind speeds at 15°C water temperature and 20°C air temperature.

7.2.3 Halibut Crude Mass Balance Forecasts

The mass balance for Halibut crude under the constant 5 knot wind case (Figure 7-3) shows that 23.9% of the oil is predicted 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 longer-chain compounds with higher boiling points. 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 7-4), where the winds are of greater strength on average, entrainment of Halibut crude into the water column is predicted to increase. Approximately 24 hours after the spill, 54.6% of the oil mass is forecast to have entrained and a further 25.1% is forecast to have evaporated, leaving only a small proportion of the oil floating on the water surface (<2%).

The increased level of entrainment in the variable-wind case result in a higher percentage decaying at an approximate rate of approximately 3.2% per day an accumulated total of 22.3% after 7 days, compared to <0.1% per day and a total of 0.6% 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.

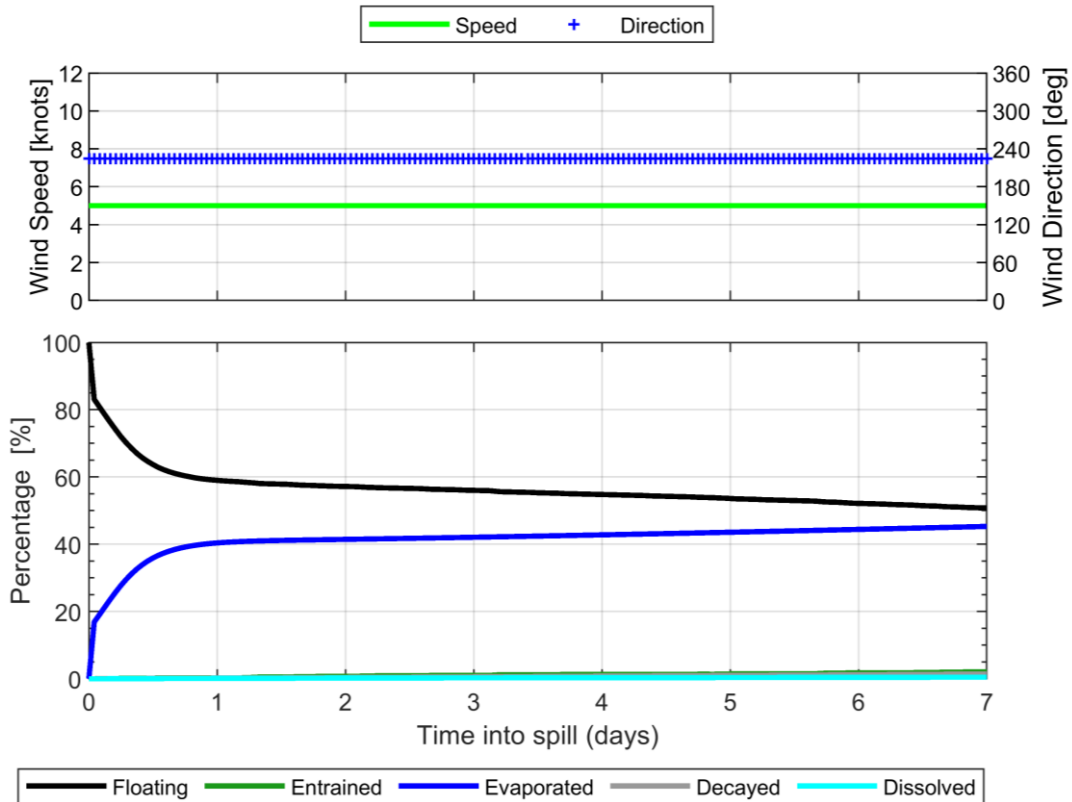


Figure 7-3 Proportional mass balance plot representing the weathering of Halibut crude spilled onto the water surface over 1 hour and subject to a constant 5 knots wind speed at 15°C water temperature and 20°C air temperature.

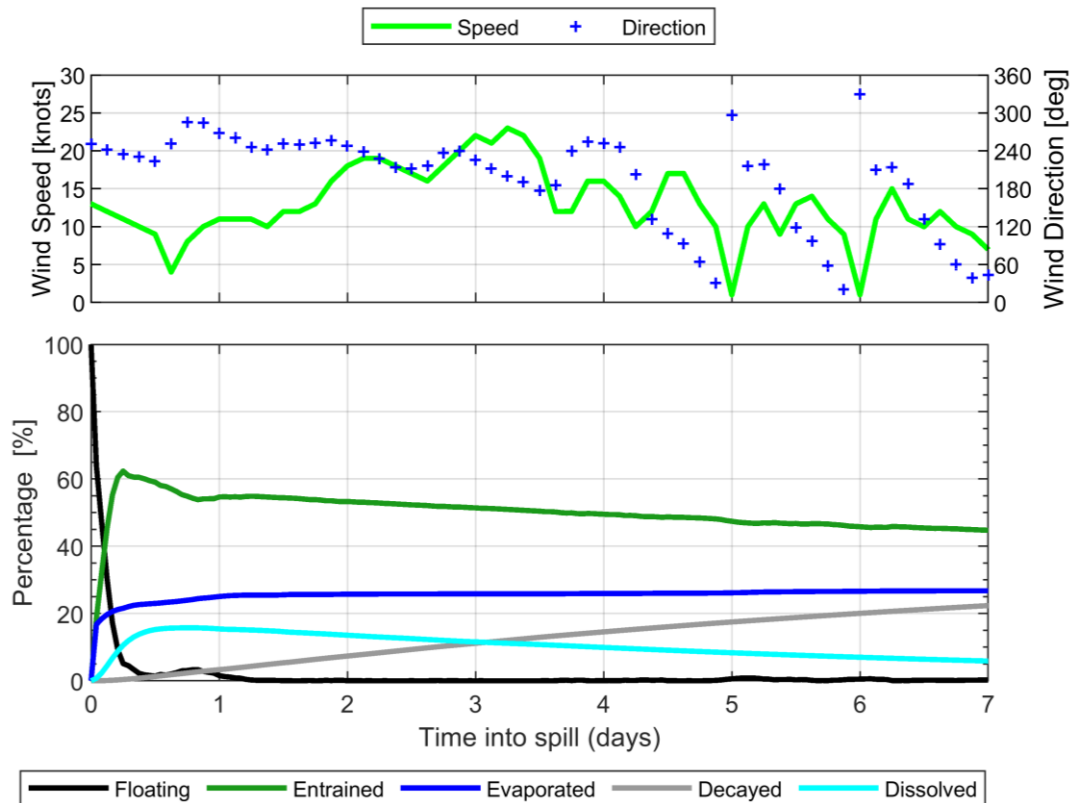


Figure 7-4 Proportional mass balance plot representing the weathering of Halibut crude spilled onto the water over 1 hour and subject to variable wind speeds at 15°C water temperature and 20°C air temperature.

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 1	Scenario 2
Description	Loss of well control at Whiptail	Loss of well control at Mulloway
Number of randomly selected spill start times for scenario	100	100
Model period	Annual	Annual
Oil type	West Kingfish crude	Halibut crude
Spill volume (m ³) [bbl]	61,544 [405,575]	22,747 [149,903]
Release type	Surface	Surface
Release duration (days)	98	98
Simulation length (days)	118	118
Surface oil concentration thresholds and exposure risk (g/m ²) ^	1 (low); 10 (moderate); 50 (high)	
Shoreline oil accumulation thresholds and exposure risk (g/m ²) ^	10 (low); 100 (moderate); 1,000 (high)	
Dissolved hydrocarbon concentrations and exposure risk (ppb) ^	10 (low); 50 (moderate); 400 (high)	
Entrained hydrocarbon concentrations and exposure risk (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 the predicted sea-surface and water column (subsurface) exposure and shoreline accumulation (if predicted).

9.1 Annual Analysis

9.1.1 Statistics

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 **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 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 concentrations at each grid cell.
- **Maximum total volume** ashore (found in shoreline statistics table) – Is the total volume of oil stranded on the shorelines throughout the duration of the simulation.
- **Maximum peak volume ashore** (found in the deterministic analysis section) - Is the peak volume of oil accumulated on shorelines at a single point in time. This peak value does not include oil that came ashore earlier in the simulation and was subsequently lost through evaporation or other weathering processes.

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 of floating oil above 10 g/m²;
- b. Minimum time before shoreline accumulation above 10 g/m²;
- c. Largest volume of oil ashore;
- d. Longest length of oil accumulation above 100 g/m²;

- e. Largest area of entrained hydrocarbon exposure above 100 ppb; and
- f. Largest area of dissolved hydrocarbon exposure above 50 ppb.

9.2.1 Receptors Assessed

A range of environmental receptors and shorelines were assessed for floating oil exposure, shoreline contact and water column exposure as part of the study (see Figure 9-1 to Figure 9-10). 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 (<https://www.dcceew.gov.au/>). Risks of exposure were separately calculated for each sensitive receptor area and have been tabulated. Note, due to the volume and geographical extent of Biologically Important Areas (BIAs) predicted to receive potential impacts from spilled hydrocarbon, it is recommended to use the following website to obtain detailed maps on all BIAs assessed: <http://www.environment.gov.au/webgis-framework/apps/ncva/ncva.jsf>.

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		
		Water column	Floating oil	Shoreline
Australian Marine Park	AMP	✓	✓	✗
Biologically Important Areas	BIA	✓	✓	✗
Interim Biogeographic Regionalisation for Australia bioregions	IBRA	✓	✓	✗
Integrated marine and coastal regionalisation areas	IMCRA	✓	✓	✗
Marine Park	MP	✓	✓	✗
Marine National Park	MNP	✓	✓	✗
Marine Sanctuary	MS	✓	✓	✗
Nature Reserve	NR	✓	✓	✗
Ramsar Sites	Ramsar	✓	✓	✗
Reefs, Shoals and Banks	RSB	✓	✓	✗
Key Ecological Feature	KEF	✓	✓	✗
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)

Table 9-2 Summary of the receptors that the release locations for Whiptail and Mulloway reside within.

Acronym	Receptor
BIA	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
	Short-tailed shearwater - Foraging
	Shy Albatross - Foraging
	Southern Right Whale - Migration
	Wandering Albatross - Foraging
	White Shark - Breeding
	White Shark - Distribution
IMCRA	Twofold Shelf

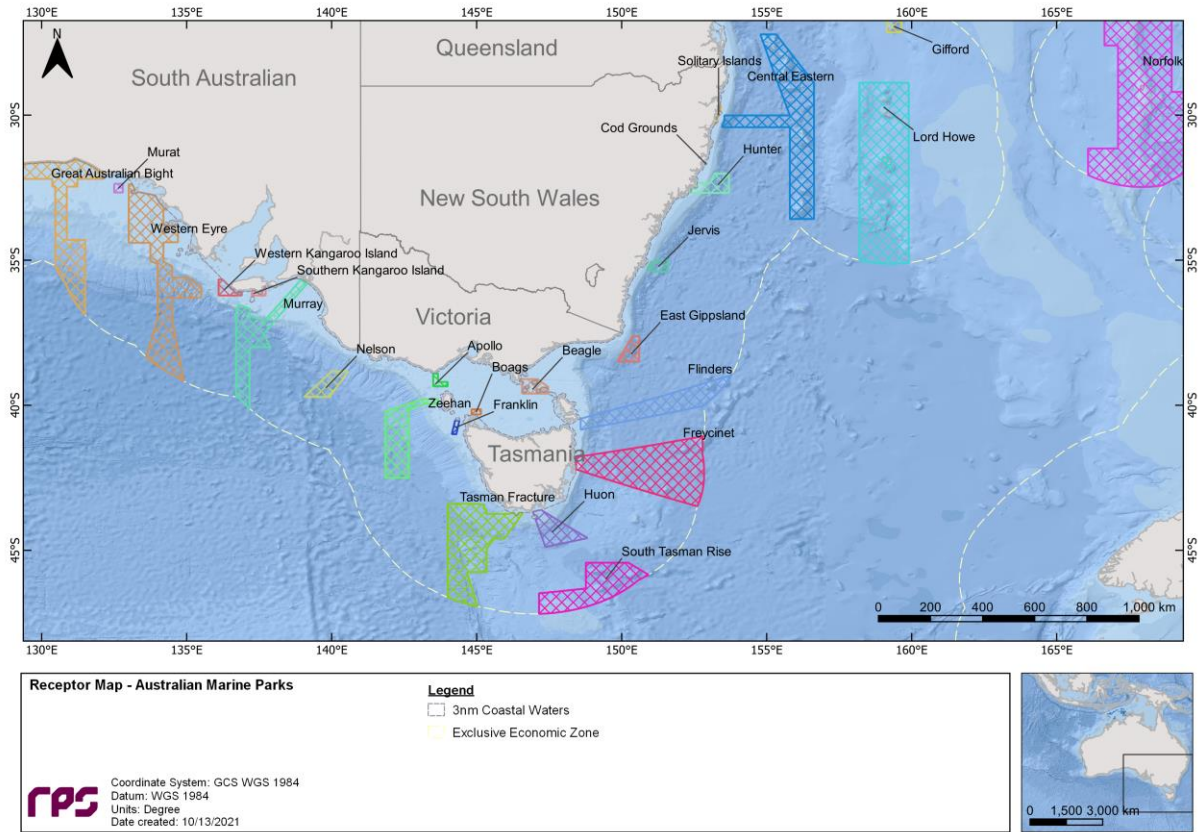


Figure 9-1 Receptor map for Australian Marine Parks (AMP).

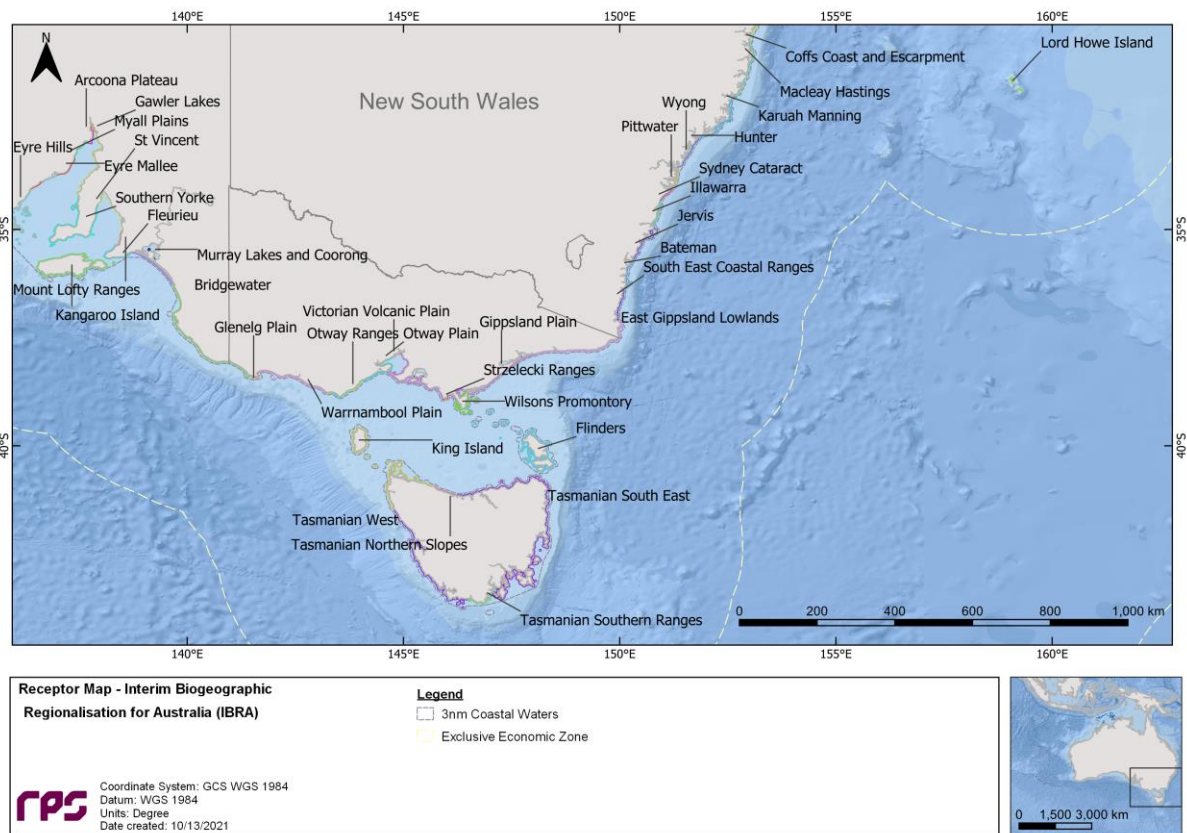


Figure 9-2 Receptor map for the Interim Biogeographic Regionalisation for Australia (IBRA) bioregions.

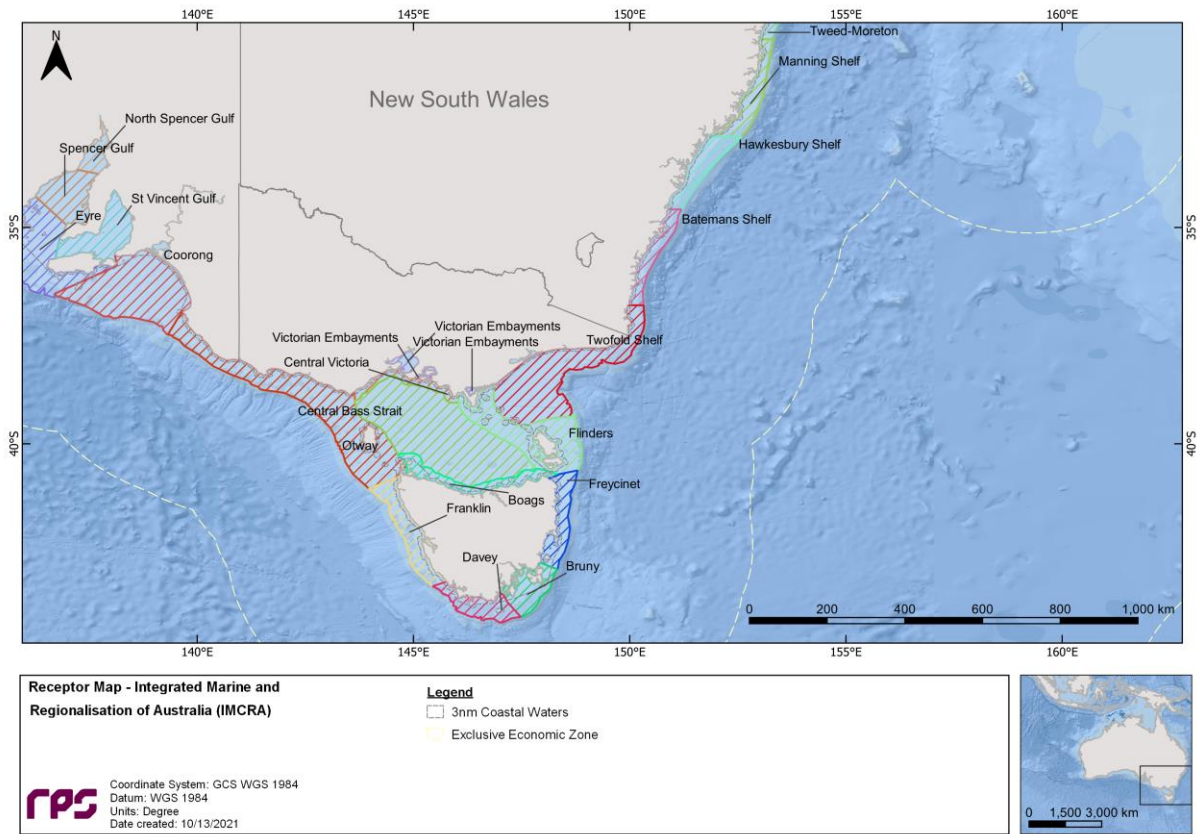


Figure 9-3 Receptor map for integrated marine and coastal regionalisation (IMCRA) areas.

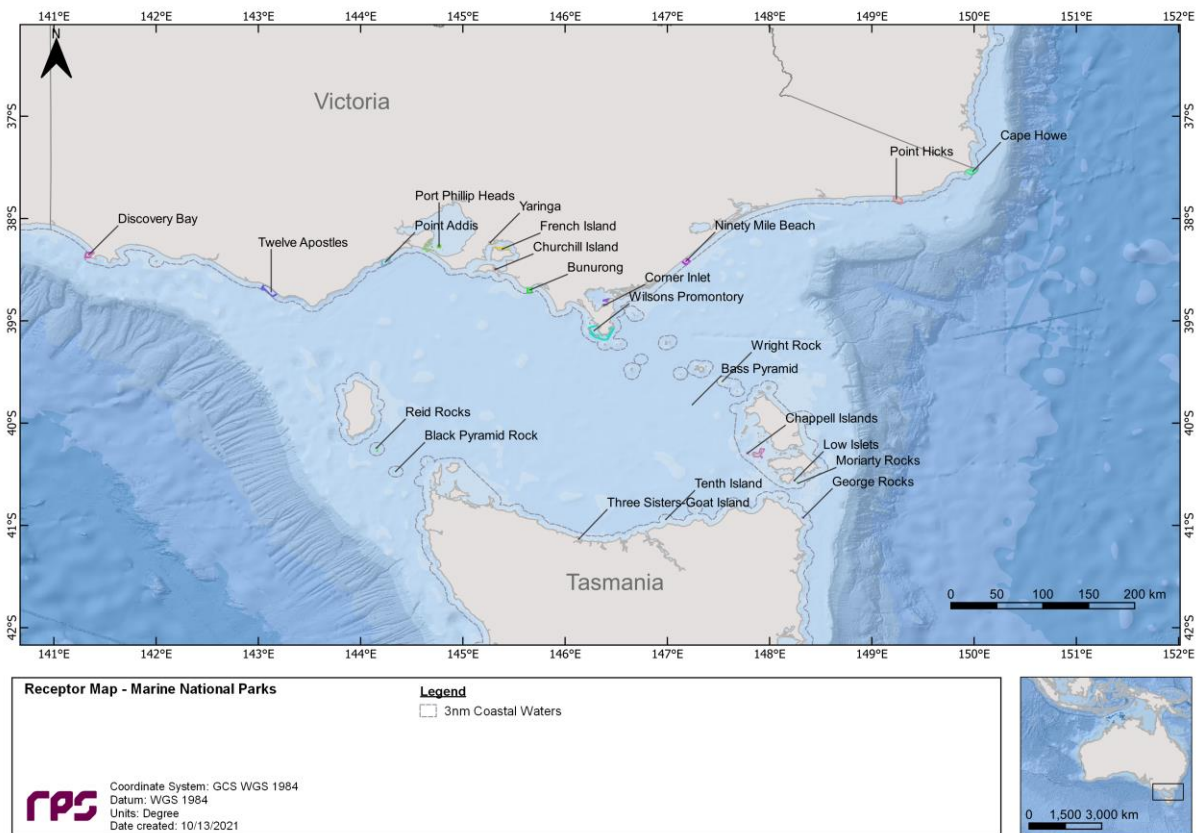


Figure 9-4 Receptor map for Marine National Parks (MNP).

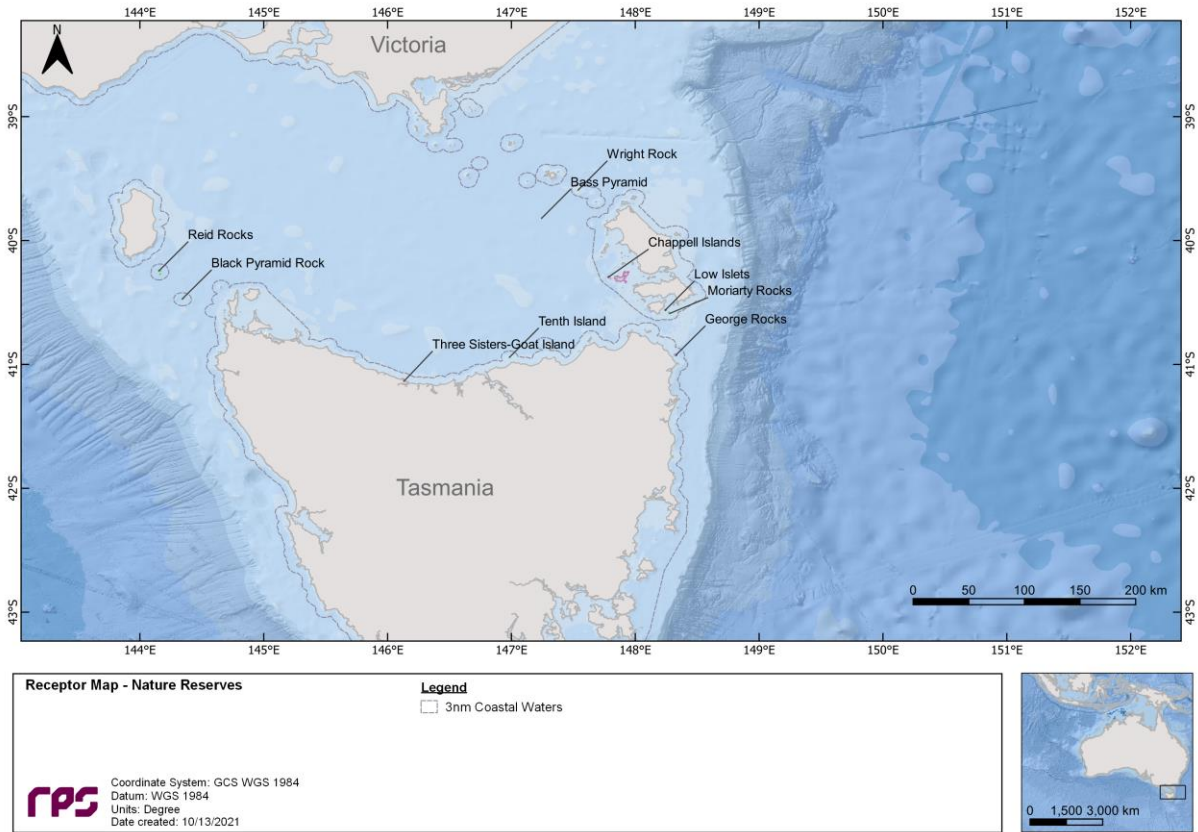


Figure 9-5 Receptor map for Nature Reserves (NR).

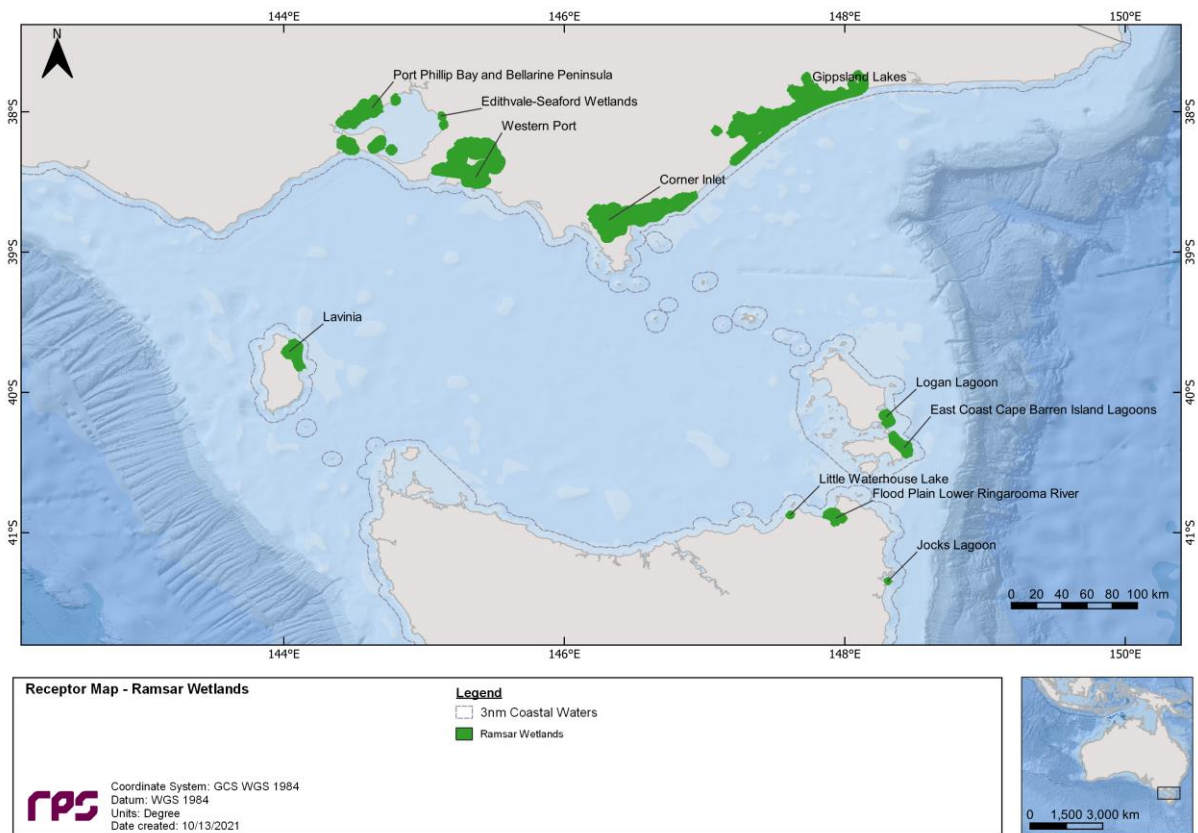


Figure 9-6 Receptor map for Ramsar Sites (Ramsar).

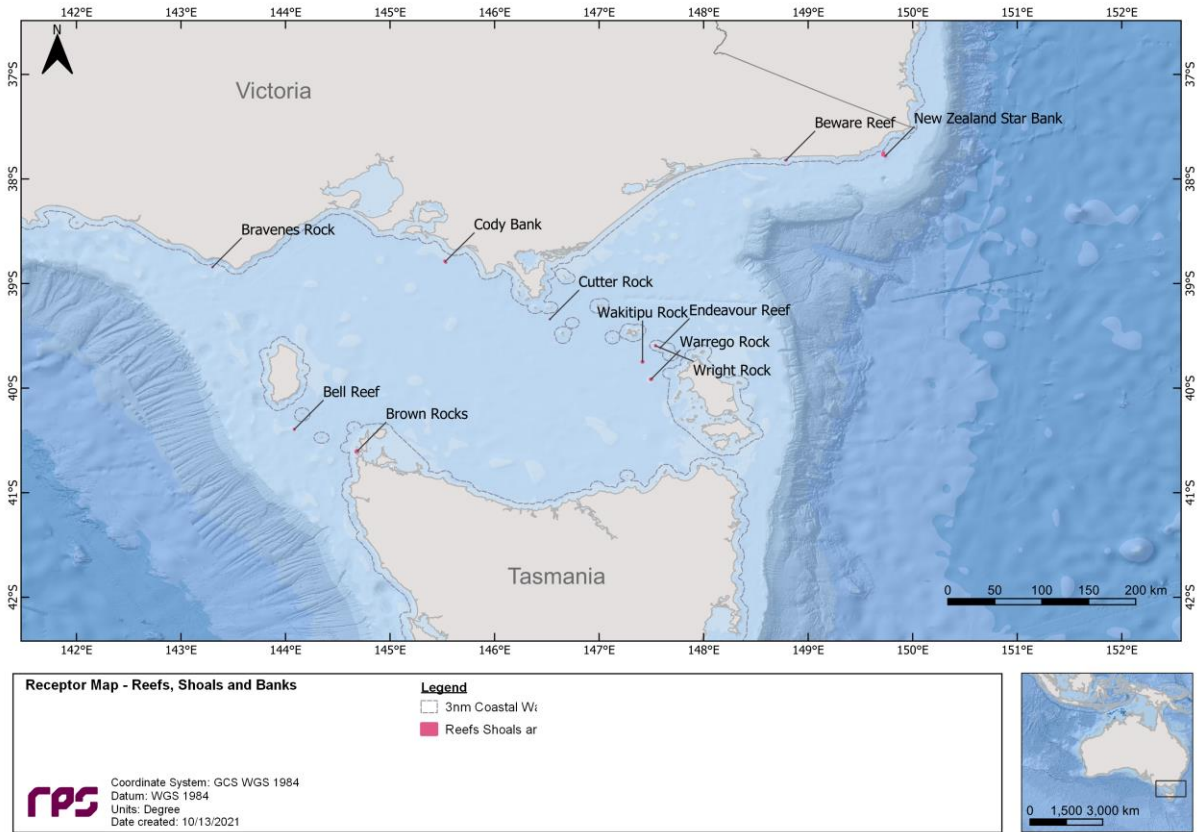


Figure 9-7 Receptor map for Reefs, Shoals and Banks (RSB).

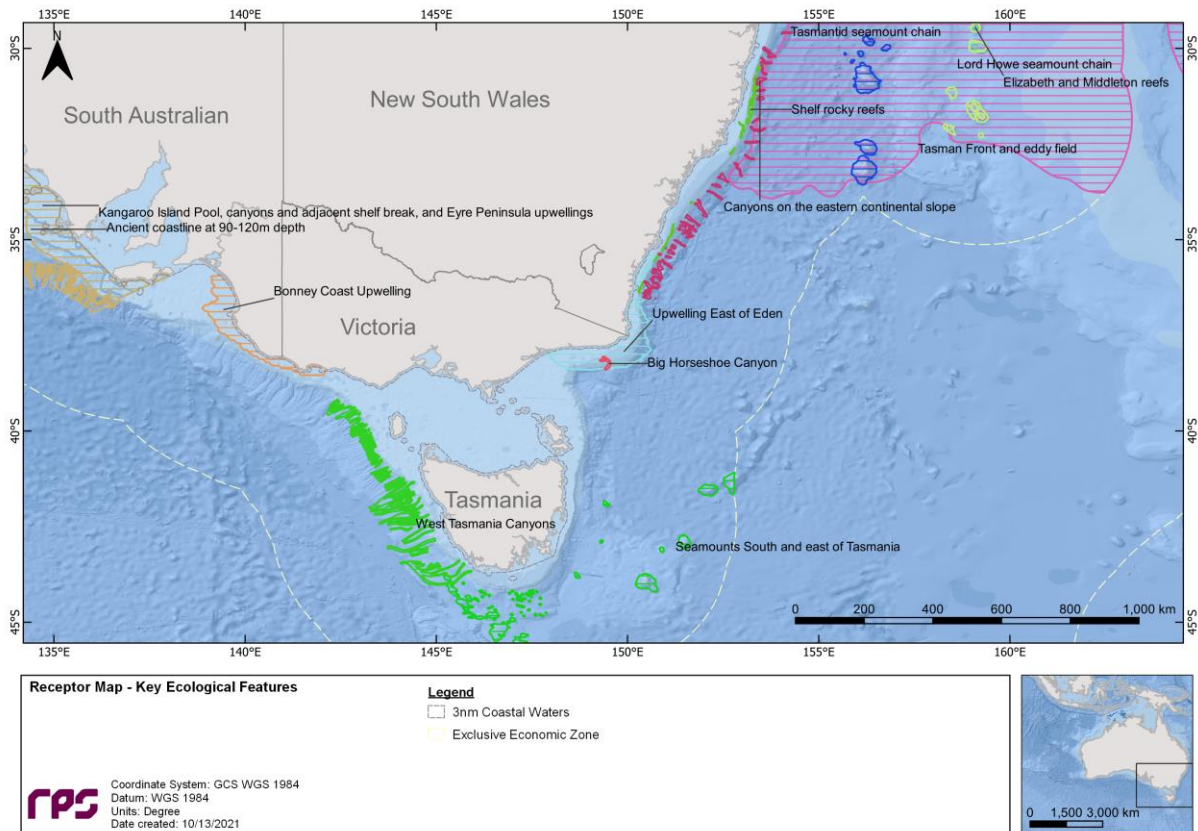


Figure 9-8 Receptor map for Key Ecological Features (KEF).

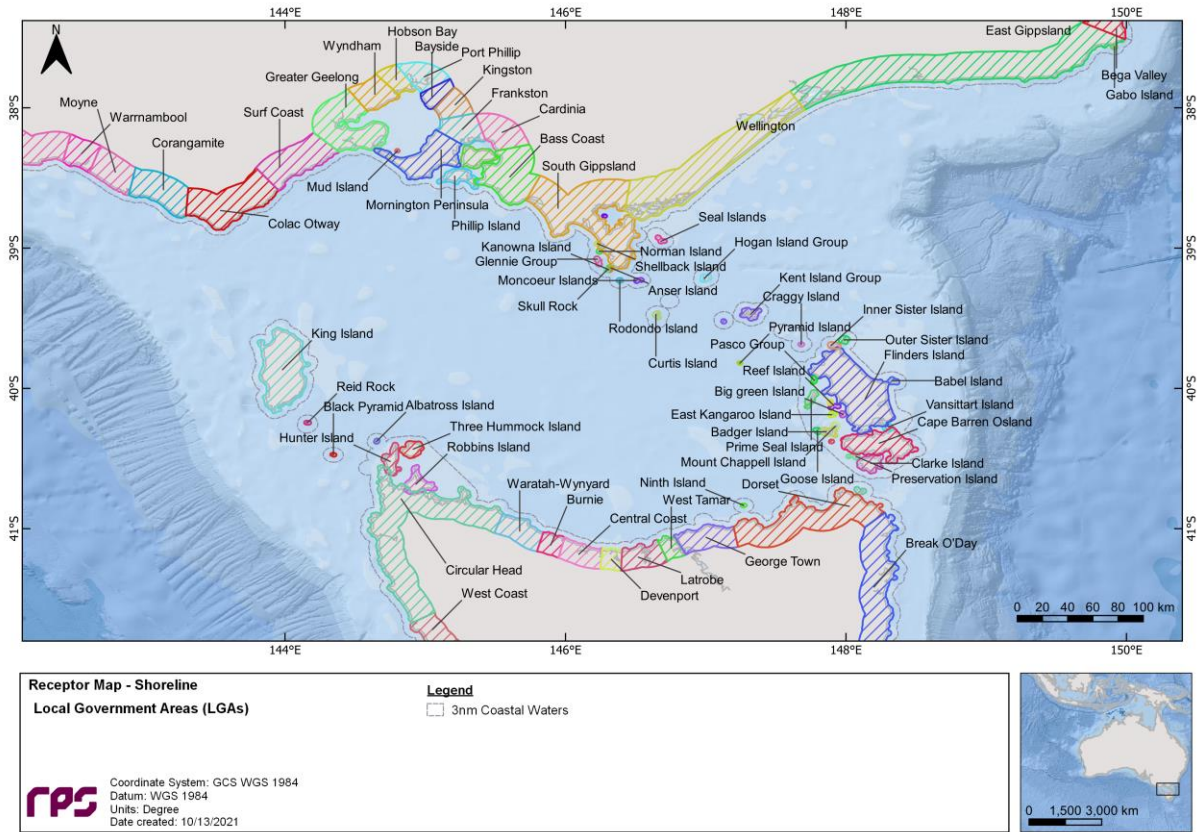


Figure 9-9 Receptor map for Local Government Areas (LGA).

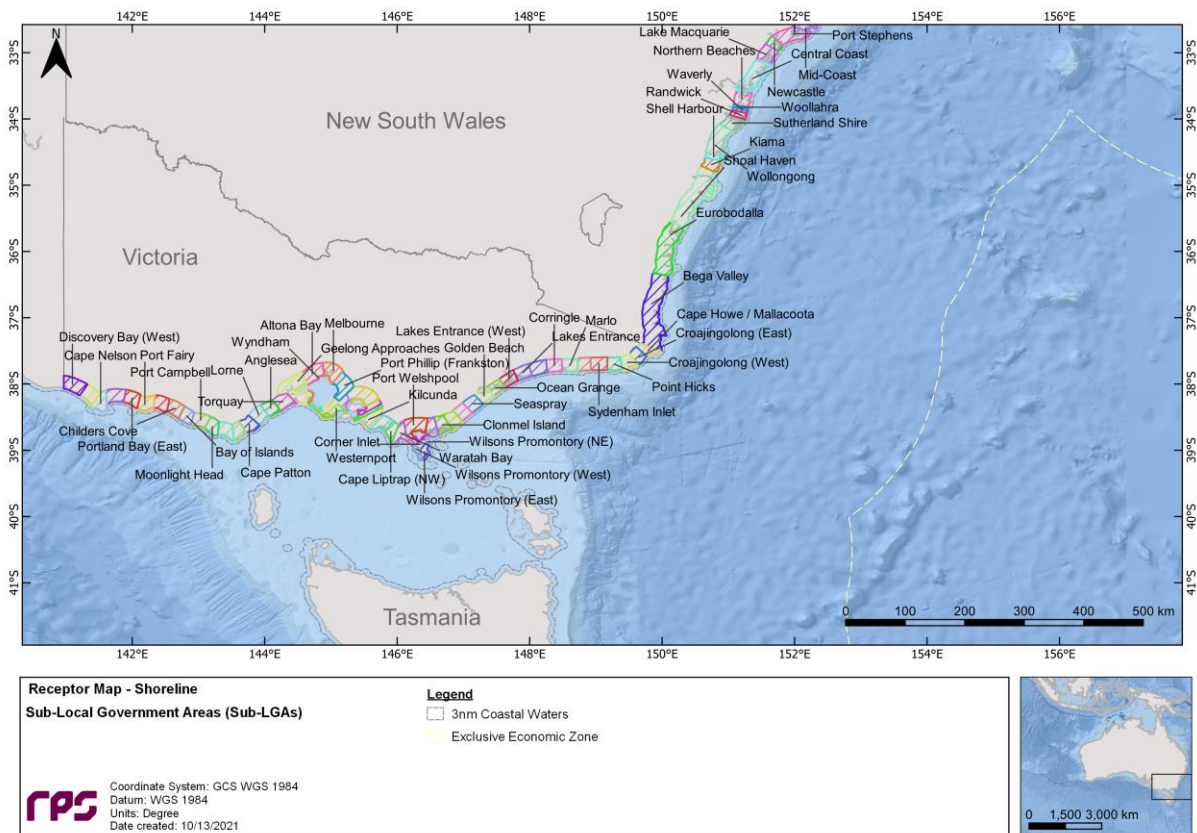


Figure 9-10 Receptor map for Sub Local Government Areas (Sub-LGA).

10 RESULTS: SCENARIO 1 – 61,544 m³ LOSS OF WELL CONTROL FROM WHIPTAIL JUR

This scenario examined a 61,544 m³ (405,575 bbl) surface release of West Kingfish crude over 98 days following a loss of well control at the Whiptail JUR release location. A total of 100 spill simulations were run and tracked for 118 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 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 g/m²), moderate (≥ 10 g/m²) and high (≥ 50 g/m²) exposure levels was 375.5 km (east-northeast), 53.4 km (south-southwest) and 2.4 km (southwest), respectively.

Table 10-2 summarises the potential floating oil exposure to individual receptors during annual conditions.

A total of 30 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 9.2.1), the highest probabilities of low exposure were predicted at the White-faced Storm-petrel - Foraging (85%), White Shark - Foraging (78%) and Antipodean Albatross - Foraging (59%) BIAs. The minimum time before low floating oil exposure to the White-faced Storm-petrel - Foraging BIA was 3.96 days.

Two IBRAs (East Gippsland Lowlands and Gippsland Plain) were also predicted to be exposed to low exposure floating oil at probabilities of 74% for each receptor. Additionally, the Gippsland Plain IBRA was also predicted to experience moderate floating oil exposure (9%). The corresponding minimum time below low and moderate exposure at Gippsland Plain IBRA receptor is 2.13 and 9.25 days, respectively.

Additionally, Point Hicks MNP and Ninety Mile Beach MNP waters were predicted to be exposed to low exposure floating oil at probabilities of 71% and 65%, respectively. The corresponding minimum time before low exposure is 3.96 and 2.08 days, respectively. Ninety Mile Beach MNP was also predicted to experience floating oil at the moderate exposure threshold 8%.

Furthermore, nearshore waters of East Gippsland and Wellington LGA, and Golden Beach, Point Hicks and Seaspray sub-LGA all demonstrated probabilities of low exposures of 59% or greater. Nearshore waters of Wellington LGA (9%), and Golden Beach (3%) and Seaspray (6%) sub-LGAs were also predicted to experience floating oil at the moderate exposure threshold.

Figure 10-1 presents the zones of potential floating oil exposure for the thresholds under annualised conditions.

Table 10-1 Maximum distance and direction from the release location to floating oil exposure on the sea surface. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Distance and direction travelled	Zones of potential floating oil exposure		
	Low	Moderate	High
Maximum distance (km) from the release location	375.5	53.4	2.4
Maximum distance (km) from release location (99 th percentile)	317.2	46.3	2.4
Direction	East-northeast	South-southwest	Southwest

Table 10-2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Receptor	Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)			
	Low	Moderate	High	Low	Moderate	High	
BIA	Antipodean Albatross - Foraging	59	-	-	6.42	-	-
	Black Petrel - Foraging	13	-	-	13.58	-	-
	Black-browed Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Bullers Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Campbell Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Common Diving-petrel – Foraging*	100	100	100	0.04	0.04	0.54
	Crested Tern - Breeding	3	-	-	16.08	-	-
	Crested Tern - Foraging	12	-	-	13.75	-	-
	Flesh-footed Shearwater - Foraging	13	-	-	13.58	-	-
	Great-winged Petrel - Foraging	1	-	-	65	-	-
	Grey Nurse Shark - Foraging	23	-	-	9.67	-	-
	Grey Nurse Shark - Migration	25	-	-	9.88	-	-
	Humpback Whale - Foraging	38	-	-	6.83	-	-
	Indian Yellow-nosed Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	14	-	-	9.67	-	-
	Little Penguin - Breeding	4	-	-	16	-	-
	Little Penguin - Foraging	30	-	-	8.38	-	-
	Pygmy Blue Whale – Distribution*	100	100	100	0.04	0.04	0.54
	Pygmy Blue Whale – Foraging*	100	100	100	0.04	0.04	0.54
	Short-tailed Shearwater – Foraging*	100	100	100	0.04	0.04	0.54
	Shy Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Sooty Shearwater - Foraging	29	-	-	9.88	-	-
	Southern Right Whale – Migration*	100	100	100	0.04	0.04	0.54
	Wandering Albatross – Foraging*	100	100	100	0.04	0.04	0.54
	Wedge-tailed Shearwater - Foraging	49	-	-	6.83	-	-
	White Shark – Breeding*	100	100	100	0.04	0.04	0.54
	White Shark – Distribution*	100	100	100	0.04	0.04	0.54
White Shark - Foraging	78	-	-	3.96	-	-	
White-faced Storm-petrel - Breeding	15	-	-	13	-	-	
White-faced Storm-petrel - Foraging	85	-	-	3.96	-	-	
IBRA	Bateman	6	-	-	14.92	-	-
	East Gippsland Lowlands	74	-	-	4.71	-	-
	Gippsland Plain	74	9	-	2.13	9.25	-
	South East Coastal Ranges	6	-	-	14.54	-	-
	Wilson's Promontory	1	-	-	82.5	-	-
IMCRA	Batemans Shelf	14	-	-	13	-	-
	Flinders	17	-	-	4.88	-	-
	Twofold Shelf*	100	100	100	0.04	0.04	0.54
	Victorian Embayments	3	-	-	29	-	-
KEF	Upwelling East of Eden*	100	-	-	1.75	-	-
	Cape Howe	13	-	-	8.38	-	-
MNP	Ninety Mile Beach	65	8	-	2.08	29.79	-
	Point Hicks	71	-	-	3.96	-	-
MP	Batemans	9	-	-	14.29	-	-

Receptor		Probability of floating oil exposure (%)			Minimum time before floating oil exposure (days)		
		Low	Moderate	High	Low	Moderate	High
RSB	New Zealand Star Bank	1	-	-	53.71	-	-
	Bega Valley	13	-	-	14.54	-	-
Nearshore Waters (LGA)	East Gippsland	75	-	-	4.71	-	-
	Gabo Island	15	-	-	15.08	-	-
	Montague Island	1	-	-	80.33	-	-
	South Gippsland	1	-	-	82.5	-	-
	Wellington	68	9	-	2.13	9.33	-
	Bega Valley	13	-	-	14.54	-	-
	Cape Howe / Mallacoota	15	-	-	8.38	-	-
Nearshore Waters (Sub-LGA)	Clonmel Island	13	-	-	29.33	-	-
	Corringle	8	-	-	59.83	-	-
	Croajingolong (east)	2	-	-	25.17	-	-
	Croajingolong (west)	38	-	-	6.92	-	-
	Golden Beach	59	3	-	2.33	9.33	-
	Lake Tyers Beach	8	-	-	20.04	-	-
	Lakes Entrance	15	-	-	6.79	-	-
	Lakes Entrance (West)	21	-	-	6.63	-	-
	Marlo	26	-	-	5.75	-	-
	McLoughlins Beach	12	-	-	4.79	-	-
	Ocean Grange	49	-	-	2.79	-	-
	Point Hicks	68	-	-	4.71	-	-
	Seaspray	59	6	-	2.13	30.21	-
	Snake Island	3	-	-	29	-	-
	Sydenham Inlet	4	-	-	27.5	-	-
Wilsons Promontory (east)	1	-	-	82.5	-	-	
Woodside Beach	26	-	-	4.54	-	-	
State Waters	New South Wales	14	-	-	12.33	-	-
	Victoria	96	30	-	0.83	8.79	-

*The release location resides within the receptor boundaries.

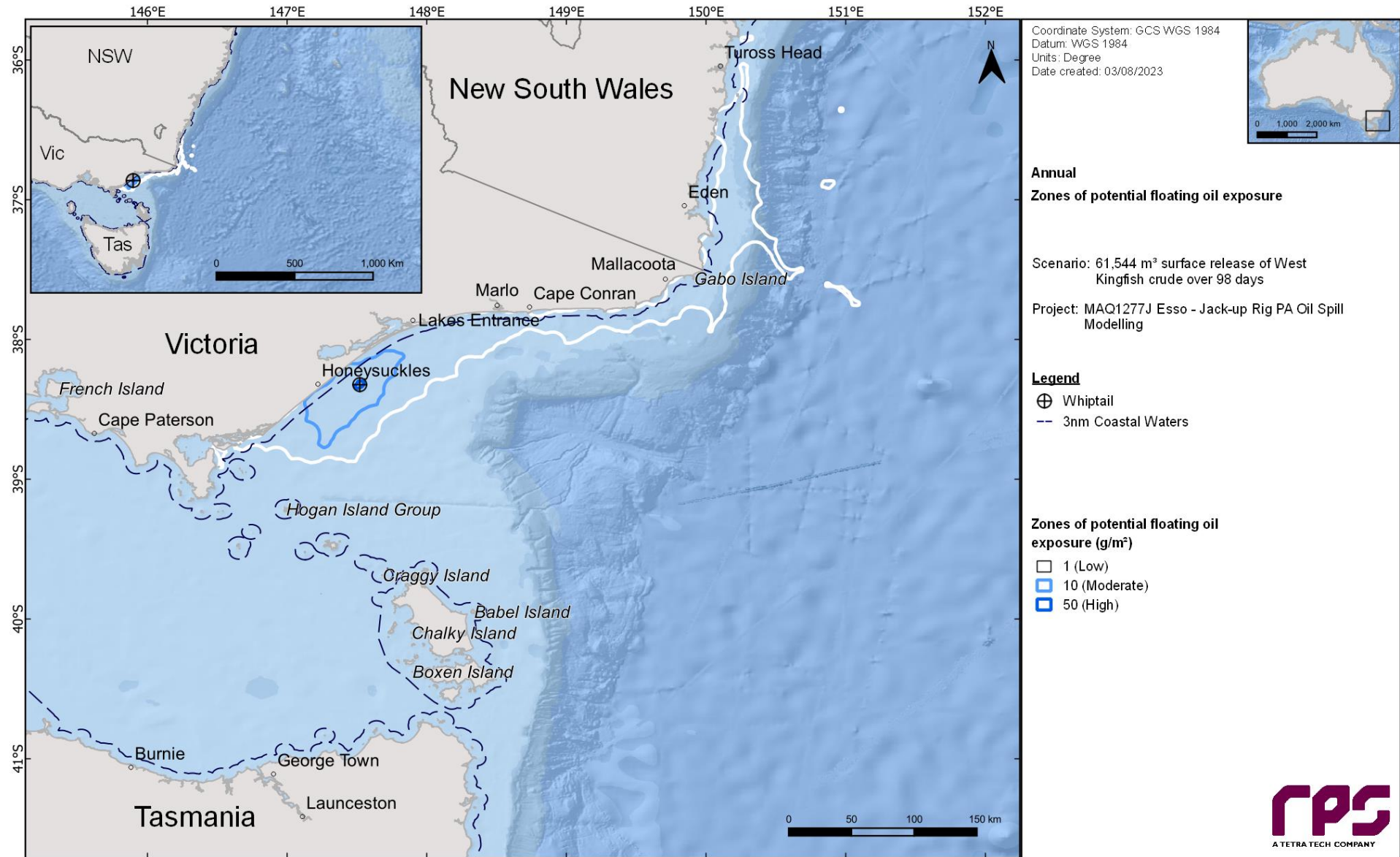


Figure 10-1 Zones of potential floating oil exposure in the event of a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.1.2 Shoreline Accumulation

Table 10-3 presents a summary of the predicted potential accumulation to any shoreline during annualised conditions. The probability of contact to any shoreline at, or above, the low threshold (≥ 10 g/m²) was 100% and the minimum time before shoreline contact at, or above, the low threshold was 1.29 days. The maximum volume ashore for a single spill trajectory was 1,267.6 m³ and the maximum length of shoreline contacted at the low threshold was 382.0 km. Additionally the maximum length of shoreline contacted at the moderate threshold and high ($\geq 1,000$ g/m²) shoreline thresholds was 106.0 km and 33.0 km, respectively.

Table 10-4 summarises the shoreline accumulation on individual receptors during annualised conditions.

The shoreline assessment identified a total of 2 Ramsar areas, 15 LGAs and 29 Sub-LGAs predicted to experience shoreline accumulation at, or above, the low threshold. The probability of low threshold accumulation predicted for Ramsar areas Corner Inlet and Gippsland Lakes was 41% and 74%, respectively. Peak volumes ashore and the minimum time before low threshold shoreline accumulation at Corner Inlet Ramsar was 19 m³ and 9.29 days and for Gippsland Lakes Ramsar was 34.5 m³ and 2.08 days. The probability of low threshold accumulation ranged from 2–100% for the LGA receptors, with greatest probability predicted for East Gippsland, and 1–98% for the Sub-LGA receptors, with the greatest probability predicted for Port Hicks. The LGA and Sub-LGA peak volumes ashore were predicted for the Wellington (1,081.9 m³) and Golden Beach (528.3 m³) receptors, respectively. Additionally, the minimum times before low threshold shoreline accumulation at any LGA and Sub-LGA was 1.29 days (Wellington LGA and Golden Beach Sub-LGA).

Figure 10-2 illustrates the maximum potential shoreline loading.

Table 10-3 Summary of oil accumulation on any shoreline. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%) at the low threshold	100
Absolute minimum time before accumulation on any shoreline (days) at the low threshold	1.29
Maximum total volume of hydrocarbons ashore (m ³) ^	1,267.6
Average total volume of hydrocarbons ashore (m ³) ^	283.1
Maximum length of the shoreline at 10 g/m² (km)	382.0
Average shoreline length (km) at 10 g/m² (km)	190.6
Maximum length of the shoreline at 100 g/m² (km)	106.0
Average shoreline length (km) at 100 g/m² (km)	40.4
Maximum length of the shoreline at 1,000 g/m² (km)	33.0
Average shoreline length (km) at 1,000 g/m² (km)	6.9

^the total volume does not consider any weathering processes that the oil has undergone once stranded on the shoreline.

Table 10-4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Shoreline Receptor	Probability of shoreline accumulation (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m ²)		Volume on shoreline (m ³)		Mean length of shoreline contacted (km)			Maximum length of shoreline contacted (km)			
	Low	Moderate	High	Low	Moderate	High	Mean	Peak	Mean	Peak	Low	Moderate	High	Low	Moderate	High	
Ramsar	Corner Inlet	41	5	-	9.29	29.96	-	5	291	2.5	19	7.4	1.3	-	26.4	1.8	-
	Gippsland Lakes	74	35	-	2.08	6.96	-	21	277	7.5	34.5	13.9	2.8	-	31.8	10.9	-
	Bega Valley	68	16	-	12.58	15	-	11	878	5.8	32.4	10.1	3.2	-	35.4	5.5	-
	East Gippsland	100	89	33	3.42	4.63	14.38	34	4,274	93.8	208.3	96.9	14.6	2	216.3	48.2	3.6
	Eurobodalla	12	2	-	17.54	19.33	-	6	122	3	21.3	15.4	0.9	-	39.1	0.9	-
	Gabo Island	71	11	-	10.63	13.25	-	26	348	1.8	12.8	3.1	1.6	-	5.5	2.7	-
	Hogan Island Group	6	-	-	14.58	-	-	4	32	0.4	1.5	3	-	-	4.5	-	-
	Kent Island Group	3	-	-	29.13	-	-	4	18	0.3	1.2	1.2	-	-	1.8	-	-
Shoreline (LGA)	Kiama	2	-	-	22.33	-	-	4	19	0.2	0.5	0.9	-	-	0.9	-	-
	Montague Island	23	5	-	13.54	15.88	-	29	408	2	10.3	3.4	1.8	-	5.5	1.8	-
	Seal Islands	20	-	-	6.88	-	-	7	53	0.4	2	1.9	-	-	5.5	-	-
	Shell Harbour	4	-	-	15	-	-	6	28	0.3	0.7	1.1	-	-	1.8	-	-
	Shoal Haven	20	6	-	14.38	30.13	-	8	183	5.2	25	15.2	1.4	-	50.9	2.7	-
	South Gippsland	17	3	-	10.5	33.08	-	5	159	2.6	26.8	13.2	4.2	-	36.3	6.4	-
	Sutherland Shire	3	-	-	81.21	-	-	5	19	0.3	0.9	1.5	-	-	1.8	-	-
	Wellington	92	73	39	1.29	2.21	3.96	100	5,828	189	1,081.9	63.7	29.1	7.9	147.2	63.6	30
	Wollongong	4	-	-	15.46	-	-	7	22	0.2	0.4	1.4	-	-	1.8	-	-
	Bega Valley	68	16	-	12.58	15	-	11	878	5.8	32.4	10.1	3.2	-	35.4	5.5	-
	Cape Conran	90	17	-	3.79	21.21	-	14	211	3.5	14.4	7.7	1.2	-	20	2.7	-
	Cape Howe / Mallacoota	76	14	-	8.38	27.46	-	13	279	3	19.2	6	2.5	-	22.7	5.5	-
	Clonmel Island	55	10	-	8.17	24.42	-	10	363	3.8	25.8	7.7	2.6	-	31.8	5.5	-
	Corner Inlet	13	2	-	10.5	33.08	-	6	112	0.3	2.3	1.1	0.9	-	2.7	0.9	-
	Corringle	75	27	-	3.96	14.79	-	23	373	7.6	35.7	13.7	3	-	25.4	10.9	-
Croajingolong (East)	42	1	-	12.88	25.88	-	6	138	0.9	12.2	3.6	1.8	-	14.5	1.8	-	
Croajingolong (West)	94	59	1	6.42	7.13	87.04	25	1,071	6.7	26.7	8.5	1.5	0.9	28.2	3.6	0.9	
Eurobodalla	12	2	-	17.54	19.33	-	6	122	3	21.3	15.4	0.9	-	39.1	0.9	-	
Golden Beach	83	65	25	1.29	3.46	4.33	212	5,828	72.1	528.3	14.5	9	6.1	28.2	23.6	13.6	
Kiama	2	-	-	22.33	-	-	4	19	0.2	0.5	0.9	-	-	0.9	-	-	
Shoreline- (Sub-LGA)	Lake Tyers Beach	67	33	-	4.88	14.75	-	29	362	10.6	39.9	15.9	5.6	-	29.1	11.8	-
	Lakes Entrance	66	39	-	4.88	6.67	-	40	579	14.6	68.4	15.8	7.2	-	29.1	18.2	-
	Lakes Entrance (West)	68	38	-	4.17	6.96	-	36	588	13.6	51.2	15.1	7.4	-	29.1	15.4	-
	Marlo	86	58	1	3.42	5.88	102.67	31	1,023	11.7	49.2	16.3	2.8	0.9	29.1	16.4	0.9
	McLoughlins Beach	57	14	-	4.25	16.83	-	17	274	5	25	8.7	4.6	-	17.3	8.2	-
	Ocean Grange	77	60	4	2.29	2.92	3.96	81	2,729	31	227.4	15.2	8.2	5	28.2	16.4	6.4
	Point Hicks	98	85	33	3.67	4.63	14.38	98	4,274	31.1	151.2	12.3	3.4	1.9	25.4	6.4	2.7
	Port Welshpool	1	-	-	86.21	-	-	3	14	< 0.1	0.3	0.9	-	-	0.9	-	-
	Seaspray	83	62	33	1.79	2.21	4.63	210	4,190	81.2	463.5	17.3	11.5	4.1	30.9	20	11.8
	Shell Harbour	4	-	-	15	-	-	6	28	0.3	0.7	1.1	-	-	1.8	-	-
	Shoal Haven	20	6	-	14.38	30.13	-	8	183	5.2	25	15.2	1.4	-	50.9	2.7	-
	Snake Island	27	1	-	10.67	45.04	-	5	152	1.1	7.3	3.3	0.9	-	12.7	0.9	-
Sutherland Shire	3	-	-	81.21	-	-	5	19	0.3	0.9	1.5	-	-	1.8	-	-	

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Shoreline Receptor	Probability of shoreline accumulation (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m ²)		Volume on shoreline (m ³)		Mean length of shoreline contacted (km)			Maximum length of shoreline contacted (km)		
	Low	Moderate	High	Low	Moderate	High	Mean	Peak	Mean	Peak	Low	Moderate	High	Low	Moderate	High
Sydenham Inlet	81	-	-	3.83	-	-	14	86	4.8	19.9	14.6	-	-	25.4	-	-
Wilson's Promontory (East)	13	3	-	26.08	33.63	-	8	159	2.4	17.2	10.1	3.3	-	22.7	4.5	-
Wilson's Promontory (NE)	15	1	-	16.71	40.71	-	5	102	0.9	7.6	5.2	0.9	-	12.7	0.9	-
Wollongong	4	-	-	15.46	-	-	7	22	0.2	0.4	1.4	-	-	1.8	-	-
Woodside Beach	66	31	-	3.17	4.88	-	27	637	8.7	50	10.3	3.8	-	22.7	13.6	-

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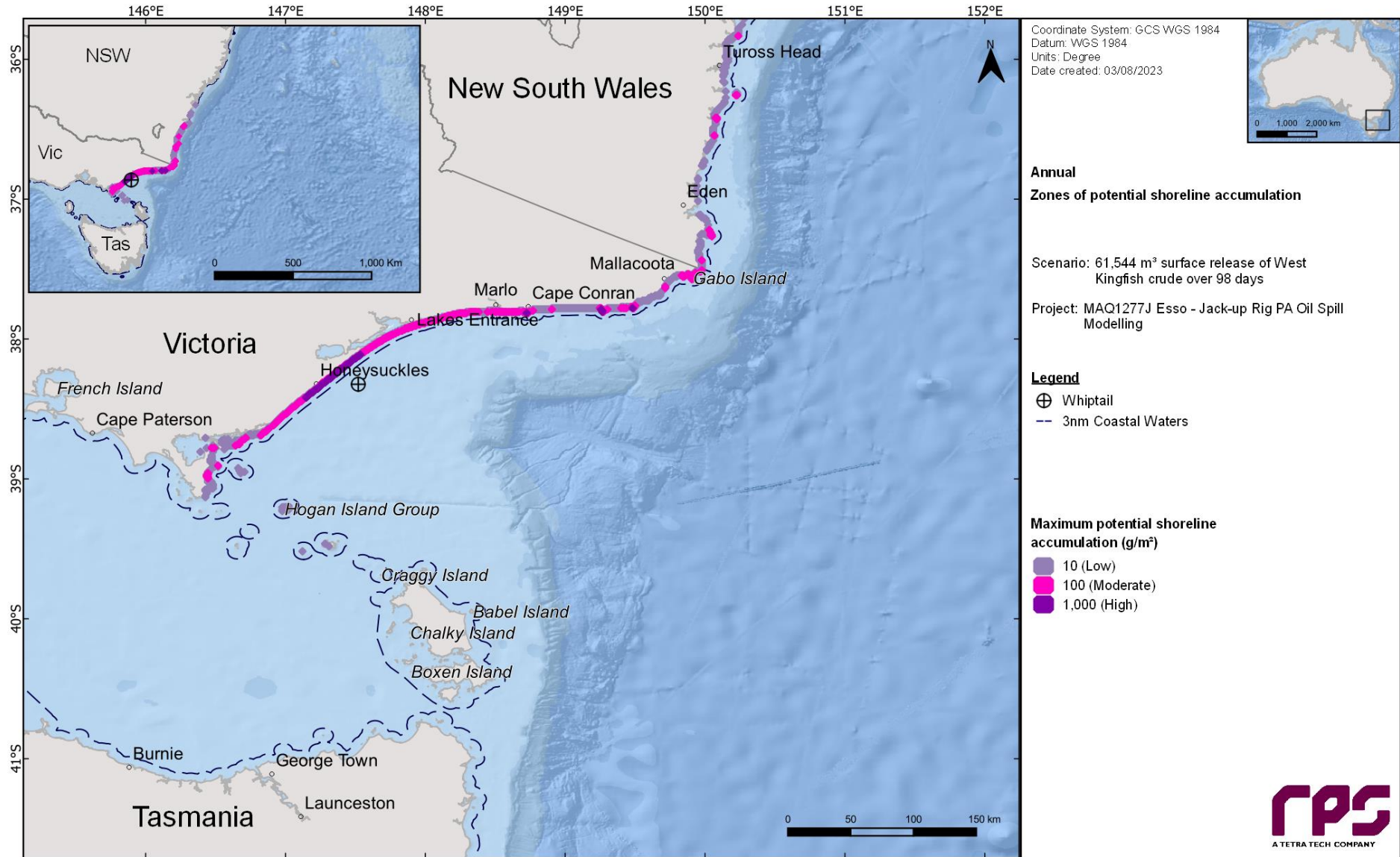


Figure 10-2 Maximum potential shoreline loading in the event of a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.1.3 In-water exposure

10.1.3.1 Dissolved Hydrocarbons

Table 10-5 summarises the maximum distance and direction from the release location to dissolved hydrocarbon exposure in the 0-10 m depth layer at the low (≥ 10 ppb), moderate (≥ 50 ppb) and high (≥ 400 ppb) thresholds levels. The maximum distances to the low, moderate and high thresholds from the release location were predicted to be 1,521 km (east-northeast), 1,453 (northeast) and 724 km (east-northeast), respectively.

Table 10-6 summarises the probability of exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer for the annualised assessment.

In the surface (0-10 m) depth layer, a total of 40 BIAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 9.2.1), the highest probabilities of exposure to the low and moderate dissolved hydrocarbons were predicted for the Antipodean Albatross - Foraging (100% and 99%), White Shark - Foraging (100% and 99%) White-faced Storm-petrel - Foraging (100% and 99%) BIAs.

A total of 9 AMPs, 12 IBRAs and 13 IMCRAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold with probabilities of low exposure ranging between 2–66%, 1–100% and 1–68% (excluding Twofold Shelf IMCRA (100%) which the release location resides within), respectively. The highest probability predicted at any of the AMPs, IBRAs and IMCRAs (excluding Twofold Shelf IMCRA) were predicted for the East Gippsland AMP, East Gippsland Lowlands IBRA and Batemans Shelf IMCRA.

Eight KEFs were predicted to be exposed to dissolved hydrocarbons at, or above the low threshold with probabilities ranging between 2–100%. Furthermore, 6 MNP (1–100%), 2 Ramsar areas (both 54%), 8 RSBs (1–100%), 50 LGA nearshore waters (1–100%), 34 Sub-LGA nearshore waters (1–100%) and 3 State Waters (34–100%) were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold.

Figure 10-3 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer, for each threshold assessed.

Table 10-5 Maximum distance and direction from the release location to dissolved hydrocarbon exposure thresholds in the 0 – 10 m depth layer. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Distance and direction travelled	Zones of potential dissolved hydrocarbon exposure		
	Low	Moderate	High
Maximum distance (km) from the release location	1,521	1,453	724
Maximum distance (km) from release location (99 th percentile)	1280	877	367
Direction	East-northeast	Northeast	East-northeast

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Table 10-6 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
AMP	Beagle	442.8	36	17	1	6.04	7.04	40.83
	Boags	27.8	2	-	-	45.67	-	-
	Central Eastern	101.1	4	1	-	35.04	45	-
	East Gippsland	1,458.20	66	23	2	9.17	9.33	19.92
	Flinders	443.6	17	5	1	13.58	13.58	22.5
	Freycinet	154.2	7	1	-	23.08	27.42	-
	Hunter	44.3	4	-	-	60.75	64.54	-
	Jervis	242.5	17	7	-	16.79	17.63	-
	Lord Howe	64.3	5	1	-	42.75	71.92	-
BIA	Antipodean Albatross - Foraging	1,582.90	100	99	8	2.17	2.17	4.92
	Australasian Gannet - Foraging	28	2	-	-	46.04	-	-
	Black Noddy - Foraging	48.5	3	-	-	52.17	108.46	-
	Black Petrel - Foraging	924.9	46	16	3	7.46	7.5	15.25
	Black-browed Albatross - Foraging*	1,582.90	100	100	8	0.04	0.08	4.92
	Black-faced Cormorant - Foraging	104.9	6	1	-	31.29	50.75	-
	Black-winged Petrel - Foraging	60.6	5	1	-	50.58	50.96	-
	Bullers Albatross - Foraging*	849.9	100	100	3	0.04	0.08	7.04
	Campbell Albatross - Foraging*	1,582.90	100	100	8	0.04	0.08	4.92
	Common Diving-petrel - Foraging*	1,133.30	100	100	9	0.04	0.08	3.46
	Common Noddy - Foraging	60.6	5	1	-	50.21	50.96	-
	Crested Tern - Breeding	619.6	35	12	1	11.25	12.33	16.08
	Crested Tern - Foraging	899.6	45	16	3	8.5	12.08	15.25
	Flesh-footed Shearwater - Foraging	924.9	46	16	3	7.46	7.5	15.25
	Great-winged Petrel - Foraging	546.4	45	16	1	7.54	7.54	32.88
	Grey Nurse Shark - Foraging	1,582.90	86	58	4	6.63	6.67	13.92
	Grey Nurse Shark - Migration	1,280.90	88	56	3	5.96	6.29	11.5

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Grey Ternlet - Foraging	60.6	5	1	-	50.25	50.96	-
Humpback Whale - Foraging	1,582.90	92	69	4	4.63	4.67	4.92
Humpback Whale - Migration	209.5	6	3	-	37.25	45.75	-
Indian Yellow-nosed Albatross - Foraging*	1,582.90	100	100	8	0.04	0.08	4.92
Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	1,315.30	93	69	3	5.75	5.79	10
Kermadec Petrel - Foraging	60.6	3	1	-	50.58	95.21	-
Little Penguin - Breeding	751.9	39	13	2	11.13	12.21	15.92
Little Penguin - Foraging	1,528	97	82	7	3.92	5.25	7.38
Little Shearwater - Foraging	60.6	5	1	-	50.25	50.96	-
Masked Booby - Foraging	60.6	5	1	-	50.25	50.96	-
Northern Giant Petrel - Foraging	546.4	45	16	1	7.54	7.54	34.54
Providence Petrel - Foraging	60.6	5	1	-	50.25	50.96	-
Pygmy Blue Whale - Distribution*	2,087.80	100	100	40	0.04	0.08	3.46
Pygmy Blue Whale - Foraging*	2,087.80	100	100	40	0.04	0.08	3.46
Red-tailed Tropicbird - Foraging	60.6	5	1	-	50.25	50.96	-
Short-tailed Shearwater - Breeding	178.5	27	8	-	8.96	17.92	-
Short-tailed Shearwater - Foraging*	1,582.90	100	100	5	0.04	0.08	3.46
Shy Albatross - Foraging*	2,087.80	100	100	40	0.04	0.08	3.46
Soft-plumaged Petrel - Foraging	20.5	1	-	-	102.5	-	-
Sooty Shearwater - Foraging	989	82	52	3	6.21	6.25	6.75
Sooty Tern - Foraging	60.6	5	1	-	50.38	50.96	-
Southern Giant Petrel - Foraging	546.4	45	16	1	7.54	7.54	34.54
Southern Right Whale - Breeding	20.5	1	-	-	102.46	-	-
Southern Right Whale - Connecting Habitat	313.5	10	4	-	30.63	31.71	-
Southern Right Whale - Migration*	2,087.80	100	100	40	0.04	0.08	3.46
Wandering Albatross - Foraging*	1,582.90	100	100	8	0.04	0.08	4.92
Wedge-tailed Shearwater - Foraging	1,582.90	97	82	7	3.92	4.33	4.92
White Shark - Aggregation	14.3	1	-	-	63.54	-	-
White Shark - Breeding*	964.4	100	100	5	0.04	0.08	3.46

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
White Shark - Distribution*	2,087.80	100	100	40	0.04	0.08	3.46
White Shark - Foraging	2,087.80	100	99	40	2.63	2.67	4.83
White Tern - Foraging	60.6	3	1	-	50.63	96.46	-
White-bellied Storm Petrel - Foraging	60.6	5	1	-	50.38	50.96	-
White-capped Albatross - Foraging	546.4	45	16	1	7.54	7.54	34.54
White-faced Storm-petrel - Breeding	924.9	68	31	3	6.79	6.88	7.04
White-faced Storm-petrel - Foraging	2,087.80	100	99	40	2.13	2.17	4.83
White-fronted Tern - Foraging	73.6	5	1	-	49.67	58.96	-
Wilsons Storm Petrel - Migration	546.4	45	16	1	7.54	7.54	34.54
IBRA							
Bateman	609.8	32	11	1	11.33	13.42	46.38
East Gippsland Lowlands	2,087.80	100	96	40	2.83	3	7.54
Flinders	484.8	33	13	1	6.96	9.67	12.17
Gippsland Plain	755.3	70	55	5	1.83	2.5	3.67
Illawarra	206.5	8	5	-	14.88	29.88	-
Jervis	232.9	15	7	-	13.54	13.63	-
Pittwater	28.3	1	-	-	36.29	-	-
South East Coastal Ranges	312.1	26	8	-	12.71	13.96	68.29
Strzelecki Ranges	35.4	1	-	-	61.08	-	-
Sydney Cataract	21.4	2	-	-	22.21	-	-
Tasmanian South East	37.8	2	-	-	98.38	-	-
Wilsons Promontory	359.5	47	23	-	5.58	5.75	-
IMCRA							
Batemans Shelf	924.9	68	29	3	7.42	7.5	14.83
Boags	42.8	3	-	-	46.67	-	-
Bruny	10.7	1	-	-	107.21	-	-
Central Bass Strait	243.8	10	4	-	17.38	21.33	-
Central Victoria	56.3	4	1	-	21.33	21.63	-
Flinders	847.7	67	53	5	1.63	1.71	12.96
Freycinet	89.3	5	1	-	29.17	32.38	-
Hawkesbury Shelf	138.2	10	3	-	20.88	33.46	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
	Manning Shelf	23.4	2	-	-	62.38	-	-
	Otway	28	2	-	-	45.92	49.92	-
	Tweed-Moreton	13.5	1	-	-	112.92	-	-
	Twofold Shelf*	2,087.80	100	100	40	0.04	0.08	3.46
	Victorian Embayments	755.3	53	41	1	3.42	3.42	23.33
KEF	Big Horseshoe Canyon	385.5	68	23	-	7.79	10.71	13.46
	Canyons on the eastern continental slope	387.9	42	16	-	7.63	8.08	-
	Lord Howe seamount chain	31.2	2	-	-	52.13	101.5	-
	Seamounts South and east of Tasmania	106.3	6	1	-	23.08	28.38	-
	Shelf rocky reefs	354.4	39	15	-	11.42	12.17	20.88
	Tasman Front and eddy field	318.5	9	3	-	19.17	44.38	61.21
	Tasmantid seamount chain	99	4	1	-	44.71	45	-
	Upwelling East of Eden	2,087.80	100	100	40	1.04	1.08	4.83
MNP	Bunurong	14.5	1	-	-	60.25	-	-
	Cape Howe	1,071.10	95	76	6	5.54	5.58	9.71
	Corner Inlet	178	17	3	-	18.21	55.42	-
	Ninety Mile Beach	757.8	78	58	3	1.88	2.79	6.92
	Point Hicks	2,087.80	100	99	40	2.75	3.46	4.83
	Wilson's Promontory	211.2	20	6	-	9.5	10.58	-
MP	Batemans	872.5	35	12	2	11.25	12.33	15.92
	Jervis Bay	136.7	11	5	-	13.96	29.17	-
MS	Beware Reef	737.9	99	79	4	2.83	3.17	35.04
NP	Kent Group	219.3	24	8	-	14.71	14.83	-
Ramsar	Corner Inlet	755.3	54	44	3	3.42	3.42	21.08
	Gippsland Lakes	540.7	54	34	1	3.38	6.79	56.46
RSB	Beware Reef	737.9	99	79	4	2.83	3.17	35.04
	Cody Bank	14.6	1	-	-	55.54	-	-
	Cutter Rock	51.6	13	1	-	15.29	20.38	-
	Endeavour Reef	67.3	10	2	-	19.42	50.21	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
New Zealand Star Bank	665.2	100	86	1	3.5	3.54	16.67
Wakitipu Rock	176.1	7	1	-	18.38	18.88	-
Warrego Rock	60.1	8	1	-	21.54	29.38	-
Wright Rock	79.4	13	1	-	19.33	19.96	-
Anser Island	81.8	10	1	-	12.79	24.63	-
Babel Island	46.7	7	-	-	39.29	-	-
Badger Island	42.2	5	-	-	50.63	-	-
Bass Coast	12.2	1	-	-	67.92	-	-
Bega Valley	720	88	53	3	5.79	6.33	9.79
Big green Island	35.3	2	-	-	61.58	-	-
Boxen Island	36	4	-	-	58.38	-	-
Break O'Day	37.8	2	-	-	98.25	-	-
Cape Barren Island	62.9	5	1	-	52.33	76.79	-
Chalky Island	29	4	-	-	55.5	-	-
Clarke Island	26.5	2	-	-	58.92	-	-
Craggy Island	108.2	11	3	-	21.88	30.79	-
Curtis Island	232.8	16	3	-	20	20.92	-
Dorset	17	1	-	-	108.21	-	-
East Gippsland	2,087.80	100	96	40	2.67	3	7.54
East Kangaroo Island	31.4	3	-	-	55.83	-	-
Eurobodalla	609.8	23	6	1	12.67	14.21	46.38
Flinders Island	313.5	9	4	-	31.42	32	-
Gabo Island	696.5	93	72	6	5.46	5.71	18.29
Glennie Group	48.7	6	-	-	20.5	-	-
Goose Island	24.8	3	-	-	50.33	-	-
Hogan Island Group	484.8	33	13	1	6.96	9.67	12.17
Inner Sister Island	264.1	10	4	-	32.33	32.88	-
Kanowna Island	60.1	10	2	-	13.08	20.42	-
Kent Island Group	267	23	8	-	14.42	14.71	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
Kiama	206.5	8	5	-	14.88	30.04	-	
Martins Island	23.1	3	-	-	38.54	-	-	
Moncoeur Islands	277.5	18	5	-	11.63	14.96	-	
Montague Island	394.6	32	11	-	11.33	13.42	53.79	
Mount Chappell Island	29.2	5	-	-	59.92	-	-	
Norman Island	37.5	2	-	-	64.58	67	-	
Outer Sister Island	264.9	9	4	-	31.83	32.92	-	
Pasco Group	78.2	5	2	-	31.38	50.88	-	
Preservation Island	73.6	4	1	-	58.42	76.33	-	
Prime Seal Island	88.8	6	1	-	31.29	51	-	
Pyramid Island	79	11	2	-	17.5	17.71	-	
Randwick	28.3	1	-	-	36.29	-	-	
Reef Island	22.4	4	-	-	55.58	-	-	
Rodondo Island	128.3	13	4	-	12.17	13.08	-	
Seal Islands	309.6	47	22	-	5.58	5.75	-	
Shell Harbour	77.1	8	2	-	20.79	33.13	-	
Shellback Island	30.3	2	-	-	65.17	-	-	
Shoal Haven	232.9	15	7	-	13.54	13.63	-	
Skull Rock	96	10	2	-	13.17	24.58	-	
South Gippsland	359.5	41	23	-	7.33	8	-	
Sutherland Shire	20.8	2	-	-	36.42	-	-	
Vansittart Island	20.4	2	-	-	51.29	-	-	
Waverly	11.9	1	-	-	36.46	-	-	
Wellington	755.3	69	55	5	1.83	2.5	3.67	
Wollongong	36.2	5	-	-	21.04	-	-	
Nearshore Waters (Sub-LGA)	Bega Valley	720	88	53	3	5.79	6.33	9.79
	Cape Conran	854.2	96	80	8	2.88	3	8.21
	Cape Howe / Mallacoota	819.6	91	61	3	5.67	6	18.29
	Cape Liptrap	24.9	2	-	-	61.42	-	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Clonmel Island	755.3	57	47	4	4.13	4.17	20.67
Corner Inlet	276.6	32	8	-	8.83	17.92	-
Corringle	560.6	85	52	2	3.83	4.75	27.5
Croajingolong (east)	607.5	95	59	2	6.21	6.38	42
Croajingolong (west)	1,347.10	99	85	5	3.83	5.13	8.54
Eurobodalla	609.8	23	6	1	12.67	14.21	46.38
Golden Beach	638.8	67	55	5	3.54	5.83	11.04
Kiama	206.5	8	5	-	14.88	30.04	-
Lake Tyers Beach	578.4	74	48	2	2.83	6.96	19.25
Lakes Entrance	641.9	67	43	2	2.83	3.21	37.04
Lakes Entrance (west)	612.6	67	44	3	3.92	5.88	36.83
Marlo	769.6	98	77	9	2.83	3.54	13.58
McLoughlins Beach	652.5	58	52	4	1.83	2.71	3.67
Ocean Grange	722.4	70	52	3	4.92	5.63	13.96
Point Hicks	2,087.80	100	96	40	3.33	4.33	7.54
Port Welshpool	125.2	13	4	-	24.54	55.42	-
Randwick	28.3	1	-	-	36.29	-	-
Seaspray	708	70	45	3	2.13	3.04	24.04
Shell Harbour	77.1	8	2	-	20.79	33.13	-
Shoal Haven	232.9	15	7	-	13.54	13.63	-
Snake Island	321	49	23	-	6.38	8.46	-
Sutherland Shire	20.8	2	-	-	36.42	-	-
Sydenham Inlet	1,128.50	99	83	7	3.21	4.13	9.29
Venus Bay	12.2	1	-	-	67.92	-	-
Waratah Bay	35.4	2	-	-	61.08	-	-
Waverly	11.9	1	-	-	36.46	-	-
Wilsons Promontory (east)	359.5	38	15	-	8.63	9.54	-
Wilsons Promontory (north)	253.1	41	23	-	7.33	8	-
Wilsons Promontory (west)	48.8	12	-	-	12.71	20.33	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
Wollongong	36.2	5	-	-	21.04	-	-	
Woodside Beach	638.7	70	43	2	2.21	2.5	19	
State Waters	New South Wales	1,315.30	90	66	3	5.75	5.79	10
	Tasmania	484.8	34	13	1	6.71	7.08	12.17
	Victoria	2,087.80	100	99	40	1.17	1.5	3.46

*The release location resides within the receptor boundaries.

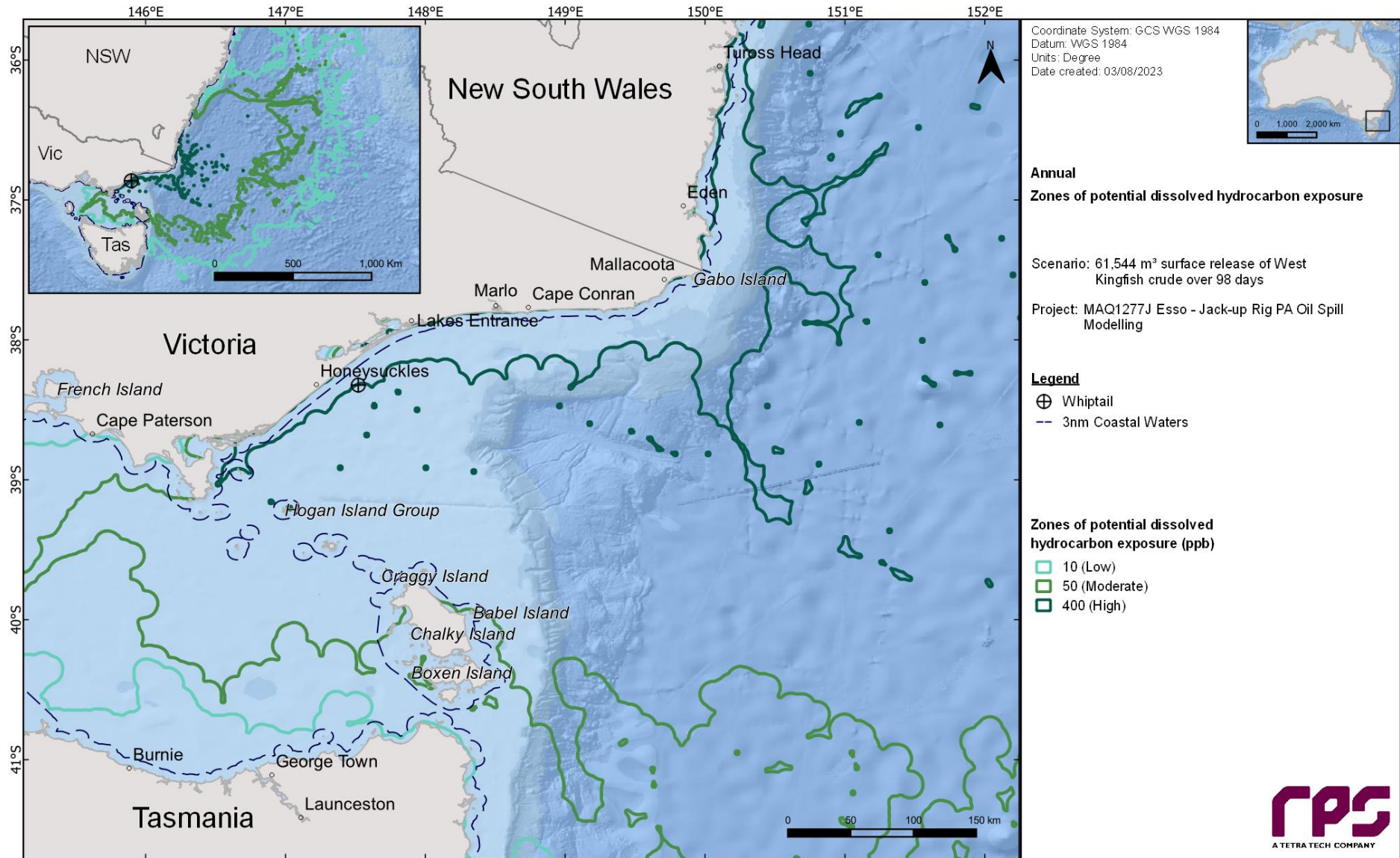


Figure 10-3 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.1.3.2 Entrained Hydrocarbons

Table 10-7 summarises the maximum distance and direction from the release location to entrained hydrocarbons at the low (≥ 10 ppb) and high (≥ 100 ppb) exposure levels. The maximum distance to the low and high thresholds from the release location was 1,518 km (northeast) and 1,092 km (east-northeast), respectively.

Table 10-8 presents the probability of exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer for the annualised assessment.

In the surface (0-10 m) depth layer, a total of 67 BIAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 9.2.1), the highest probabilities of exposure to the low and high entrained hydrocarbons were predicted for the Antipodean Albatross - Foraging (100% and 100%), Grey Nurse Shark - Foraging (98% and 87%) Grey Nurse Shark - Migration (98% and 87%), Humpback Whale - Foraging (99% and 93%), Indo-Pacific/Spotted Bottlenose Dolphin - Breeding (99% and 93%), Little Penguin - Foraging (99% and 96%), Wedge-tailed Shearwater - Foraging (99% and 96%), White Shark - Foraging (100% and 100%) and White-faced Storm-petrel - Foraging (100% and 100%) BIAs.

Additionally, 9 AMPs, 17 IBRAs and 13 IMCRAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold with probabilities of low exposure ranging between 4–97%, 1–100% and 1–87% (excluding Twofold Shelf IMCRA (100%) which the release location resides within), respectively. The highest probability predicted at any of the AMPs, IBRAs and IMCRAs (excluding Twofold Shelf IMCRA) were predicted for the East Gippsland AMP, East Gippsland Lowlands IBRA and Batemans Shelf IMCRA.

Nine KEFs were predicted to be exposed to entrained hydrocarbons at, or above the low threshold with probabilities ranging between 2–100%. Furthermore, 4 Ramsar areas (2–68%), 9 RSBs (2–100%), 60 LGA nearshore waters (1–100%) and 43 Sub-LGA nearshore waters (1–100%) were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold.

Figure 10-4 illustrate the zones of potential entrained hydrocarbon exposure for the 0-10 m depth.

Table 10-7 Maximum distance and direction from the release location to entrained hydrocarbon exposure thresholds in the 0 – 10 m depth layer. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Distance and direction travelled	Zones of potential entrained hydrocarbon exposure	
	Low	High
Maximum distance (km) from the release location	1,518	1,092
Maximum distance (km) from release location (99th percentile)	1,427	923
Direction	Northeast	East-northeast

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Table 10-8 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Receptor		Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
			Low	High	Low	High
AMP	Beagle	427.2	59	36	4.46	6.83
	Boags	65.3	4	-	43.79	-
	Central Eastern	98.6	12	-	35.04	-
	East Gippsland	683.5	97	57	7.79	9.13
	Flinders	329.5	69	10	13	13.67
	Freycinet	107.7	26	1	21.67	32
	Hunter	26.5	9	-	52.54	-
	Jervis	586.7	48	17	16.29	19.63
	Lord Howe	54	15	-	41.33	-
BIA	Antipodean Albatross - Foraging	1,860.40	100	100	2.17	2.29
	Australasian Gannet - Foraging	65.7	2	-	45.46	-
	Black Noddy - Breeding	23	6	-	52.29	-
	Black Noddy - Foraging	47	7	-	51.25	-
	Black Petrel - Foraging	1,013.50	80	42	7.29	7.46
	Black-browed Albatross - Foraging*	3,821.90	100	100	0.04	0.04
	Black-faced Cormorant - Foraging	129.3	17	2	30.13	50.75
	Black-winged Petrel - Breeding	23	6	-	52.29	-
	Black-winged Petrel - Foraging	54	13	-	50.29	-
	Bullers Albatross - Foraging*	3,821.90	100	100	0.04	0.04
	Campbell Albatross - Foraging*	3,821.90	100	100	0.04	0.04
	Common Diving-petrel - Foraging*	3,821.90	100	100	0.04	0.04
	Common Noddy - Breeding	32	6	-	52.08	-
	Common Noddy - Foraging	54.3	13	-	50	-
	Crested Tern - Breeding	467.2	55	27	11.08	12.25
	Crested Tern - Foraging	1,013.50	76	38	8.5	12
	Flesh-footed Shearwater - Breeding	23	6	-	52.29	-

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Flesh-footed Shearwater - Foraging	1,013.50	80	42	7.29	7.46
Goulds Petrel - Foraging	13.2	1	-	96.17	-
Great-winged Petrel - Foraging	755.4	80	41	7.38	7.54
Grey Nurse Shark - Foraging	1,318.50	98	87	6.5	6.58
Grey Nurse Shark - Migration	1,702.20	98	87	5.63	6.25
Grey Ternlet - Breeding	23	6	-	52.29	-
Grey Ternlet - Foraging	54.3	13	-	50.08	-
Humpback Whale - Foraging	1,702.20	99	93	4.58	4.63
Humpback Whale - Migration	212.4	21	5	37.21	65
Indian Yellow-nosed Albatross - Foraging*	3,821.90	100	100	0.04	0.04
Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	981.4	99	93	5.58	5.71
Indo-Pacific/Spotted Bottlenose Dolphin - Foraging	18.1	1	-	77.58	-
Kermadec Petrel - Foraging	54	13	-	50.25	-
Little Penguin - Breeding	467.2	59	34	10.92	12.17
Little Penguin - Foraging	1,087.70	99	96	3.88	5.17
Little Shearwater - Breeding	23	6	-	52.29	-
Little Shearwater - Foraging	54.3	13	-	50.08	-
Masked Booby - Breeding	23	6	-	52.29	-
Masked Booby - Foraging	54.3	13	-	50.08	-
Northern Giant Petrel - Foraging	709.1	80	41	7.38	7.54
Providence Petrel - Breeding	23	6	-	52.29	-
Providence Petrel - Foraging	54.3	13	-	50.08	-
Pygmy Blue Whale - Distribution*	3,821.90	100	100	0.04	0.04
Pygmy Blue Whale - Foraging*	3,821.90	100	100	0.04	0.04
Red-tailed Tropicbird - Breeding	23	6	-	52.29	-
Red-tailed Tropicbird - Foraging	54.3	13	-	50.08	-
Short-tailed Shearwater - Breeding	194.8	51	18	7.42	25.25
Short-tailed Shearwater - Foraging*	3,821.90	100	100	0.04	0.04
Shy Albatross - Breeding	55.2	2	-	46	-

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Shy Albatross - Foraging*	3,821.90	100	100	0.04	0.04
Soft-plumaged Petrel - Foraging	31.3	3	-	42.29	-
Sooty Shearwater - Foraging	1,312.50	97	78	6.08	6.21
Sooty Tern - Foraging	54	13	-	50.21	-
Southern Giant Petrel - Foraging	709.1	80	41	7.38	7.54
Southern Right Whale - Breeding	33.7	3	-	75.08	-
Southern Right Whale - Connecting Habitat	219.2	20	4	29.67	32.96
Southern Right Whale - Migration*	3,821.90	100	100	0.04	0.04
Wandering Albatross - Foraging*	3,821.90	100	100	0.04	0.04
Wedge-tailed Shearwater - Foraging	1,702.20	99	96	3.88	4.29
White Shark - Aggregation	16.3	4	-	62.58	-
White Shark - Breeding*	3,821.90	100	100	0.04	0.04
White Shark - Distribution*	3,821.90	100	100	0.04	0.04
White Shark - Foraging	2,479.60	100	100	2.63	3.21
White Tern - Foraging	54	11	-	50.46	-
White-bellied Storm Petrel - Foraging	54	13	-	50.21	-
White-capped Albatross - Foraging	709.1	80	41	7.38	7.54
White-faced Storm-petrel - Breeding	1,253.20	87	50	6.75	6.83
White-faced Storm-petrel - Foraging	2,479.60	100	100	2.08	2.21
White-fronted Tern - Foraging	86	16	-	39.92	-
Wilson's Storm Petrel - Migration	709.1	80	41	7.38	7.54
IBRA					
Bateman	580	49	19	11.17	13.96
East Gippsland Lowlands	2,479.60	100	100	2.42	3.25
Flinders	412.4	47	24	6.54	9.33
Gippsland Plain	1,560.20	86	73	1.67	1.71
Hunter	14.4	1	-	78.33	-
Illawarra	394	15	7	14.83	29.38
Jervis	496.2	32	11	13.08	14.38
Karuah Manning	15.7	2	-	62.88	-

REPORT

Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
King Island	55.8	2	-	45.92	-
Lord Howe Island	17.1	4	-	84.46	-
Pittwater	47.4	9	-	35.46	-
South East Coastal Ranges	689.9	59	13	10.5	13.88
Strzelecki Ranges	78.5	5	-	39.29	-
Sydney Cataract	67.7	9	-	21.5	-
Tasmanian South East	39.3	6	-	56.42	-
Wilson's Promontory	622.5	58	37	5.29	5.63
Wyong	21	1	-	76.5	-
IMCRA					
Batemans Shelf	1,253.20	87	49	7.38	7.71
Boags	66	10	-	44.79	-
Bruny	18.7	2	-	104.75	-
Central Bass Strait	252	31	7	16.58	23.08
Central Victoria	101.7	12	1	21.46	61.75
Flinders	1,422.70	75	70	1.58	1.63
Franklin	10.7	1	-	57.71	-
Freycinet	94.1	15	-	27.75	-
Hawkesbury Shelf	307.8	19	7	20.71	32.83
Manning Shelf	19.8	4	-	62.58	-
Otway	65.7	2	-	45.42	-
Twofold Shelf*	3,821.90	100	100	0.04	0.04
Victorian Embayments	911	68	51	2.88	3.25
KEF					
Big Horseshoe Canyon	983.3	100	65	7.08	12.13
Canyons on the eastern continental slope	709.1	78	32	7.63	12.83
Elizabeth and Middleton reefs	16.7	2	-	84.58	-
Lord Howe seamount chain	39.8	10	-	50.42	-
Seamounts South and east of Tasmania	68.1	26	-	22.21	-
Shelf rocky reefs	485.1	70	35	11.17	12.08
Tasman Front and eddy field	447.5	28	6	19.54	46.71

REPORT

Receptor		Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
			Low	High	Low	High
	Tasmanid seamount chain	98.6	10	-	44.54	-
	Upwelling East of Eden	2,479.60	100	100	0.96	1.04
MNP	Bunurong	42.6	2	-	56.5	-
	Cape Howe	839.3	99	93	5.42	5.54
	Corner Inlet	94.4	46	-	8.33	-
	Ninety Mile Beach	1,491.60	91	84	1.5	1.71
	Point Hicks	2,479.60	100	100	2.71	3.29
	Wilson's Promontory	250.3	47	11	8.54	22
MP	Batemans	675	55	27	10.96	12.25
	Jervis Bay	321	26	10	13.08	14.46
	Lord Howe Island	23	6	-	52.33	-
	Port Stephens - Great Lakes	16.9	2	-	62.88	-
MS	Beware Reef	1,372.30	99	91	2.67	4.04
NP	Kent Group	322.7	38	20	12.42	15.25
Ramsar	Corner Inlet	911	68	51	2.88	3.25
	Elizabeth and Middleton Reefs Marine National Nature Reserve	17.1	2	-	83.92	-
	Gippsland Lakes	1,250.40	68	49	4.71	6.08
	Myall Lakes	10.1	1	-	101.42	-
RSB	Beware Reef	1,423.80	99	92	2.67	3.54
	Brown Rocks	11.8	2	-	48.13	-
	Cody Bank	72.5	2	-	52.79	-
	Cutter Rock	157.4	30	11	13.88	15.21
	Endeavour Reef	169.7	30	7	19.25	22.17
	New Zealand Star Bank	1,191.40	100	100	3.46	4.71
	Wakitipu Rock	186	28	7	18.25	21.75
	Warrego Rock	143.1	22	2	19.25	50.38
	Wright Rock	215.4	31	8	18.92	19.96
	Anser Island	143.9	30	3	12.67	27.71

REPORT

Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Babel Island	106.2	20	1	34.96	97.13
Badger Island	72.8	14	-	51.04	-
Bass Coast	26.8	2	-	59.75	-
Bega Valley	981.4	98	87	5.63	5.79
Big green Island	71.3	14	-	53.83	-
Boxen Island	63.7	12	-	52.71	-
Break O'Day	39.3	4	-	75.38	-
Cape Barren Island	66.3	13	-	49	-
Central Coast	20	1	-	76.5	-
Chalky Island	63.6	13	-	47.71	-
Clarke Island	41.3	11	-	58.83	-
Craggy Island	156.1	26	4	19.71	30.33
Curtis Island	252.8	33	7	15.25	20.96
Dorset	22.2	6	-	74.13	-
Nearshore Waters (LGA) East Gippsland	2,479.60	100	100	2.33	3.25
East Kangaroo Island	71.5	14	-	52.79	-
Elizabeth Reef	17.1	2	-	84.46	-
Eurobodalla	474.5	43	12	11.21	14.08
Flinders Island	217.6	19	4	30.08	49.58
Gabo Island	729.2	97	91	5.29	5.5
Glennie Group	114.3	18	2	22.04	67.5
Goose Island	60.9	13	-	50.08	-
Hogan Island Group	412.4	47	24	6.54	9.33
Inner Sister Island	217.6	18	4	29.67	32.96
Kanowna Island	192.8	28	4	12.67	23.54
Kent Island Group	321.2	38	20	12.58	14.71
Kiama	394	13	6	14.83	29.46
Lake Macquarie	21	1	-	77.04	-
Lord Howe Island	15.5	4	-	96.92	-

REPORT

Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Martins Island	32.7	22	-	14.79	-
Mid-Coast	15.7	1	-	98.96	-
Moncoeur Islands	209.1	38	13	11.13	14.83
Montague Island	444.7	49	19	11.17	13.96
Mount Chappell Island	76.1	14	-	52.92	-
Newcastle	14.6	1	-	78.17	-
Ninth Island	17.2	4	-	56.42	-
Norman Island	140.6	10	2	38.33	66.54
Northern Beaches	19.2	3	-	36.13	-
Outer Sister Island	167.6	17	3	29.75	45.5
Pasco Group	129.3	17	2	31.13	50.75
Port Stephens	13.7	2	-	62.88	-
Preservation Island	43.8	11	-	58.33	-
Prime Seal Island	114.3	17	1	31	50.83
Pyramid Island	210.6	30	8	15.42	18.25
Randwick	46.8	6	-	35.58	-
Reef Island	69.2	13	-	52.63	-
Rodondo Island	191.1	32	7	11.17	21.96
Seal Islands	495	58	37	5.29	5.63
Shell Harbour	340	15	7	20.67	32.63
Shellback Island	123.3	9	2	38.96	66.5
Shoal Haven	496.2	31	11	13.08	14.38
Skull Rock	186.6	25	3	12.75	27.17
South Gippsland	622.5	54	33	5.75	10.58
Sutherland Shire	47.4	9	-	35.38	-
Vansittart Island	32	9	-	49.92	-
Waverly	36.6	4	-	35.75	-
Wellington	1,536.60	86	73	1.67	1.71
Wollongong	177.3	13	4	20.83	35.83

REPORT

Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Woollahra	27.3	3	-	36.08	-
Bega Valley	981.4	98	87	5.63	5.79
Cape Conran	1,467.40	100	92	2.71	3.25
Cape Howe / Mallacoota	664.4	98	89	5.5	5.75
Cape Liptrap	91.4	5	-	40.58	-
Central Coast	20	1	-	76.5	-
Clonmel Island	972.8	72	57	1.71	3.88
Corner Inlet	194.8	51	18	7.42	25.25
Corringle	1,285.80	94	69	2.71	4.79
Croajingolong (east)	627.3	97	82	6.04	6.79
Croajingolong (west)	792.9	99	98	3.58	3.83
Eurobodalla	474.5	43	12	11.21	14.08
Golden Beach	1,514.20	78	64	2.17	3.29
Kiama	394	13	6	14.83	29.46
Kilcunda	17.6	2	-	60.46	-
Lake Macquarie	21	1	-	77.04	-
Lake Tyers Beach	1,078.30	86	64	2.33	6.17
Lakes Entrance	1,134.20	85	56	2.67	4.63
Lakes Entrance (west)	1,436.30	81	55	3.54	4.54
Marlo	1,480.90	99	92	2.71	4.42
McLoughlins Beach	1,442.40	72	58	1.67	1.71
Mid-Coast	15.7	1	-	98.96	-
Newcastle	14.6	1	-	78.17	-
Northern Beaches	19.2	3	-	36.13	-
Ocean Grange	1,405	79	65	2.33	5.29
Point Hicks	2,479.60	100	100	3.17	3.38
Port Stephens	13.7	2	-	62.88	-
Port Welshpool	69.4	43	-	9.38	-
Randwick	46.8	6	-	35.58	-

Nearshore Waters (Sub-LGA)

REPORT

Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Seaspray	1,560.20	86	73	1.88	2.25
Shell Harbour	340	15	7	20.67	32.63
Shoal Haven	496.2	31	11	13.08	14.38
Snake Island	310.6	61	39	6.33	7.38
Sutherland Shire	47.4	9	-	35.38	-
Sydenham Inlet	1,824.80	100	94	3.08	4.04
Venus Bay	48.5	2	-	59.75	-
Waratah Bay	87.8	7	-	39.29	-
Waverly	36.6	4	-	35.75	-
Wilson's Promontory (east)	622.5	51	27	6.33	12.33
Wilson's Promontory (north)	396.9	54	33	5.75	10.5
Wilson's Promontory (west)	166.1	34	4	11.67	23
Wollongong	177.3	13	4	20.83	35.83
Woodside Beach	1,220.80	86	65	1.79	2.17
Woollahra	27.3	3	-	36.08	-
New South Wales	981.4	99	93	5.58	5.75
State Waters					
Tasmania	420.4	49	27	6.38	7
Victoria	2,479.60	100	100	0.79	1.17

*The release location resides within the receptor boundaries.

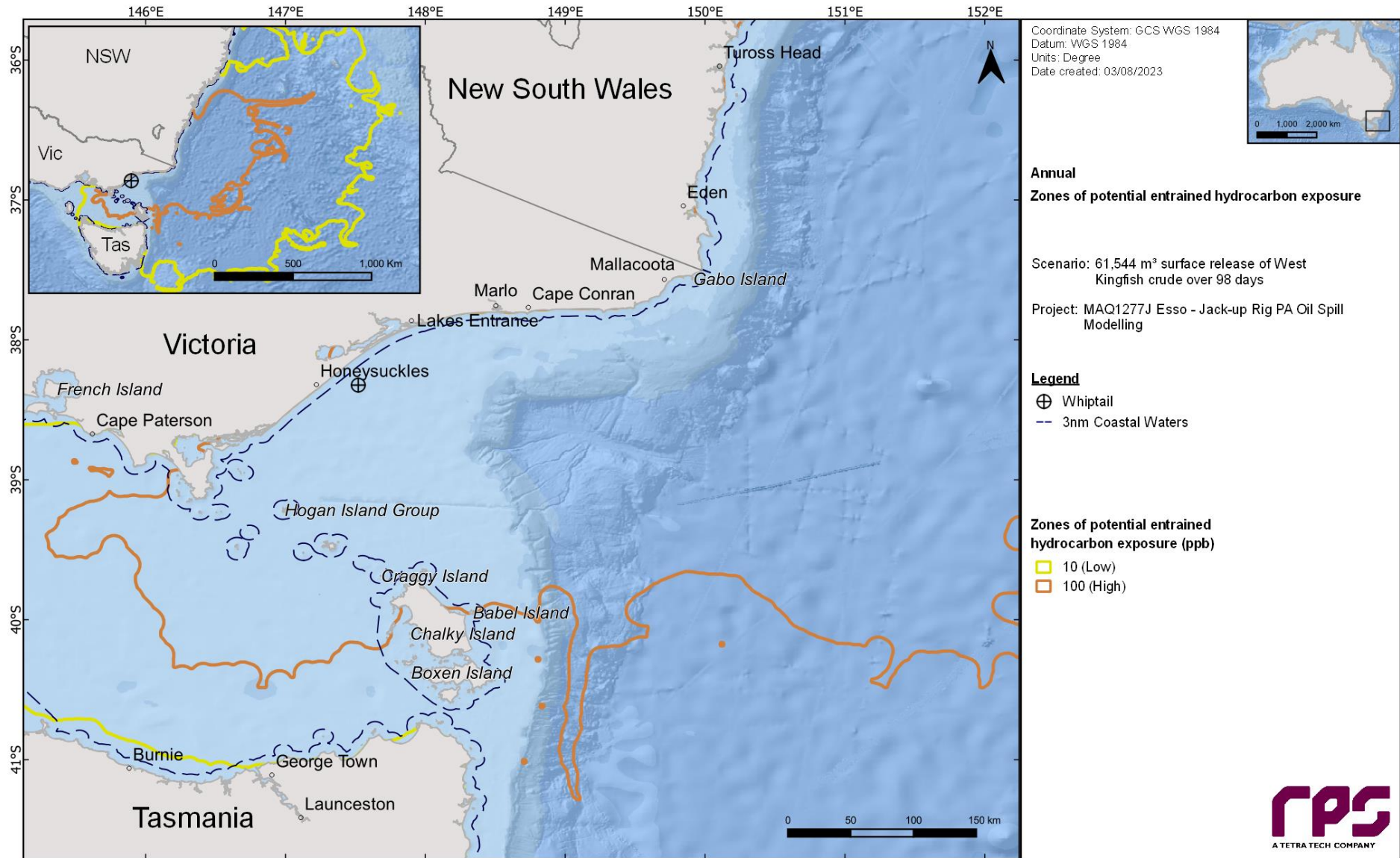


Figure 10-4 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below. The deterministic analysis assessed the largest swept area of floating oil above 10 g/m² (see Section 10.2.1), the minimum time before shoreline accumulation above 10 g/m² (see Section 10.2.2), the largest volume of oil ashore (see Section 10.2.3), the longest length of shoreline accumulation above 100 g/m² (see Section 10.2.3), the largest area of entrained hydrocarbons above 100 ppb (see Section 10.2.4), and the largest area of dissolved hydrocarbons above 50 ppb (see Section 10.2.5).

Table 10-9 presents a summary of all deterministic analysis criteria and the corresponding floating oil, shoreline accumulation, entrained and dissolved hydrocarbon values at the assessed thresholds.

Note, receptor-based statistical analysis of the worst-case simulations outlined in Table 10-9 are provided as Excel spreadsheets.

Interpretation of the deterministic analysis result table and timeseries plots:

The summary deterministic analysis results presented in the table below should be interpreted as **peak values**, representing the total volume accumulated on the shoreline or swept area exposed by floating or in-water hydrocarbons throughout the entire simulation duration. It should be noted that these peak values do consider the weathering processes that the oil undergo over time. As an example, the first simulation (run 86) showed that a maximum of 783 km² was exposed to floating oil above the moderate threshold over a period of 118 days.

It is also important to note that the timeseries plots present values at specific points in time. For example, when considering shoreline volume, the value reported in the timeseries plot does not account for oil that may have already reached the shore but was subsequently lost through evaporation or other weathering processes.

Continuing with the previous example, the timeseries plot indicates that the floating oil swept area above the moderate threshold reached approximately 40 km². This value represents the highest swept area recorded at a single point in time during the simulation.

Table 10-9 Summary of the deterministic analysis. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Variable	Threshold	Deterministic Analysis Criteria					
		Largest swept area of floating oil above 10 g/m ²	Minimum time before shoreline accumulation above 10 g/m ²	Largest volume of oil ashore	Longest length of shoreline accumulation above 100 g/m ²	Largest area of entrained hydrocarbons above 100 ppb	Largest area of dissolved hydrocarbons above 50 ppb
Run Number		86	71	68	68	3	28
Total area of floating Oil exposure (km ²)	1 g/m ²	2,713	2,837	1,964	1,964	2,020	2,635
	10 g/m ²	783	673	448	448	354	363
	50 g/m ²	3	1	2	2	1	2
Total length of shoreline accumulation (km)	10 g/m ²	290	103	301	301	61	55
	100 g/m ²	40	7	96	96	6	7
	1,000 g/m ²	5	-	30	30	-	-
Minimum time before accumulation on any shoreline (days)	10 g/m ²	9.33	1.29	2.29	2.29	41.42	4.67
	100 g/m ²	20.50	2.21	3.75	3.75	71.92	34.88
	1,000 g/m ²	52.88	-	4.33	4.33	-	-
Peak volume of oil ashore (m ³)		281	52	1,029	1,029	28	26
Total area of entrained hydrocarbon exposure (km ²)	10 ppb	500,766	277,190	62,302	62,302	445,424	411,272
	100 ppb	71,565	39,229	24,987	24,987	87,562	66,283
Total area of dissolved hydrocarbon exposure (km ²)	10 ppb	83,966	54,682	16,944	16,944	90,984	82,857
	50 ppb	19,639	15,147	7,720	7,720	22,928	23,900
	400 ppb	435	21	81	81	37	42
Start Date		26 th March 2011	21 st March 2017	1 st December 2014	1 st December 2014	18 th April 2016	25 th May 2016

10.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m²

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m² was identified as run number 86, which started on the 26th of March 2011. Figure 10-5 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 86.

Figure 10-6 displays the time series of the swept area of low (1 g/m²), moderate (10 g/m²) and high (50 g/m²) floating oil over the 118-day simulation.

Figure 10-7 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10-10 summarises the mass balance at the peak and at end of the simulation.

Table 10-10 Summary of the mass balance for the trajectory that resulted in the largest swept area of floating oil above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	1,538	80.46	0
Entrained (m ³)	12,860	98.38	9,016
Dissolved (m ³)	388	89.58	82
Evaporation (m ³)	30,550	118.00	30,550
Decay (m ³)	21,413	118.00	21,413
Ashore (m ³)	320	82.25	281

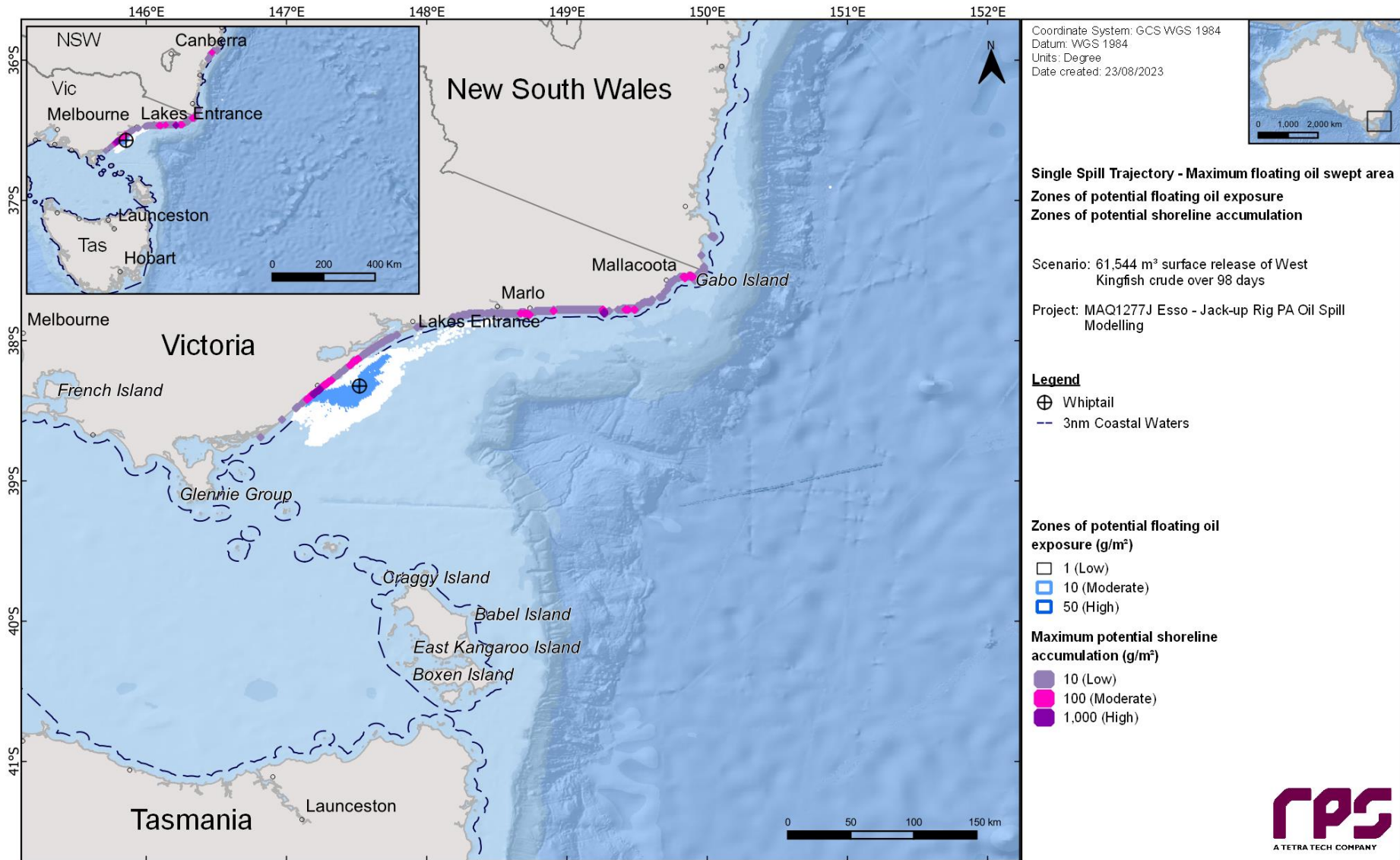


Figure 10-5 Zones of potential floating oil exposure over the 118-day simulation for the trajectory with the largest swept area of floating oil above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

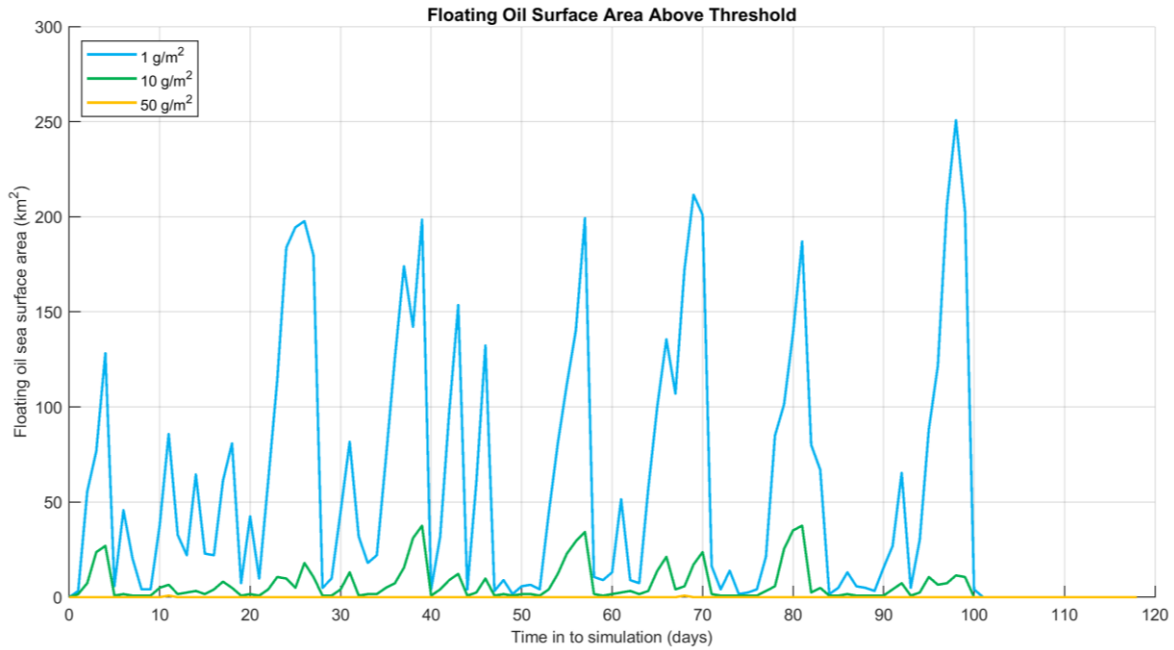


Figure 10-6 Time series of the area of floating oil for the trajectory with the largest swept area of floating oil above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

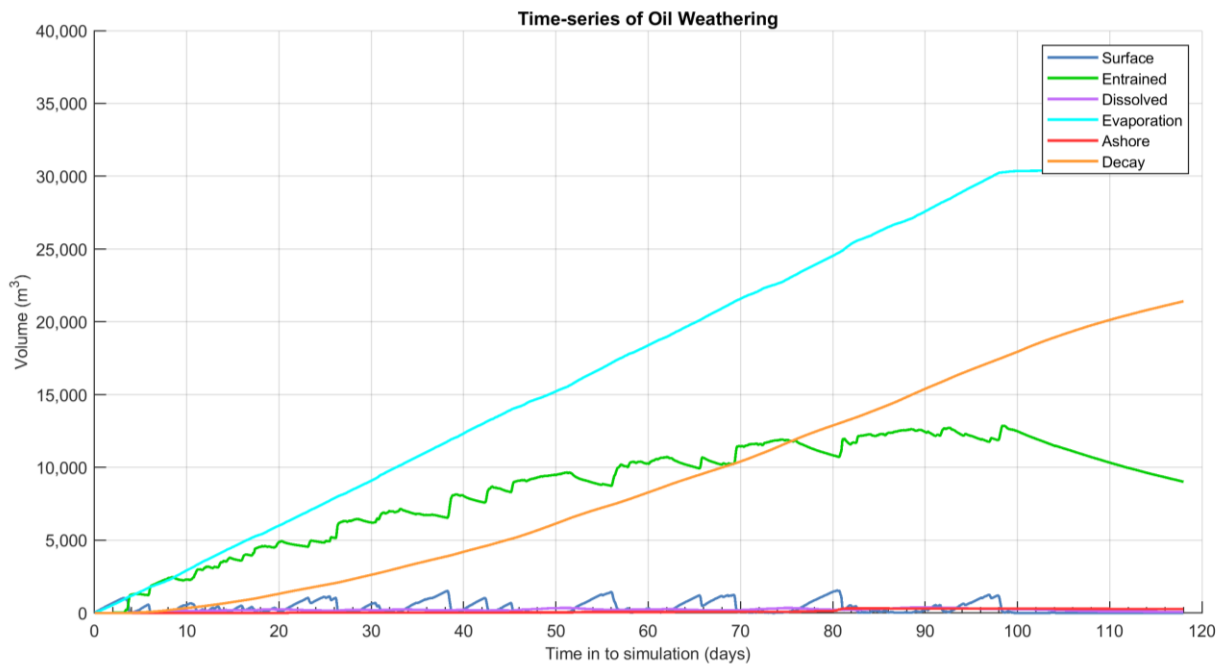


Figure 10-7 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.2.2 Deterministic Case: Minimum time before shoreline accumulation above 10 g/m²

The deterministic trajectory that resulted in the minimum time before shoreline accumulation above the low threshold (10 g/m²) was identified as run number 71 which started on the 21st of March 2017. Figure 10-8 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 71.

Figure 10-9 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10-11 summarises the mass balance at the end of the 118-day simulation.

Table 10-11 Summary of the mass balance for the trajectory that resulted in the minimum time before shoreline accumulation above the low threshold (10 g/m²). Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	1,901	56.63	1
Entrained (m ³)	13,010	96.21	9,308
Dissolved (m ³)	344	70.00	101
Evaporation (m ³)	31,322	118.00	31,322
Decay (m ³)	20,559	118.00	20,559
Ashore (m ³)	56	81.46	52

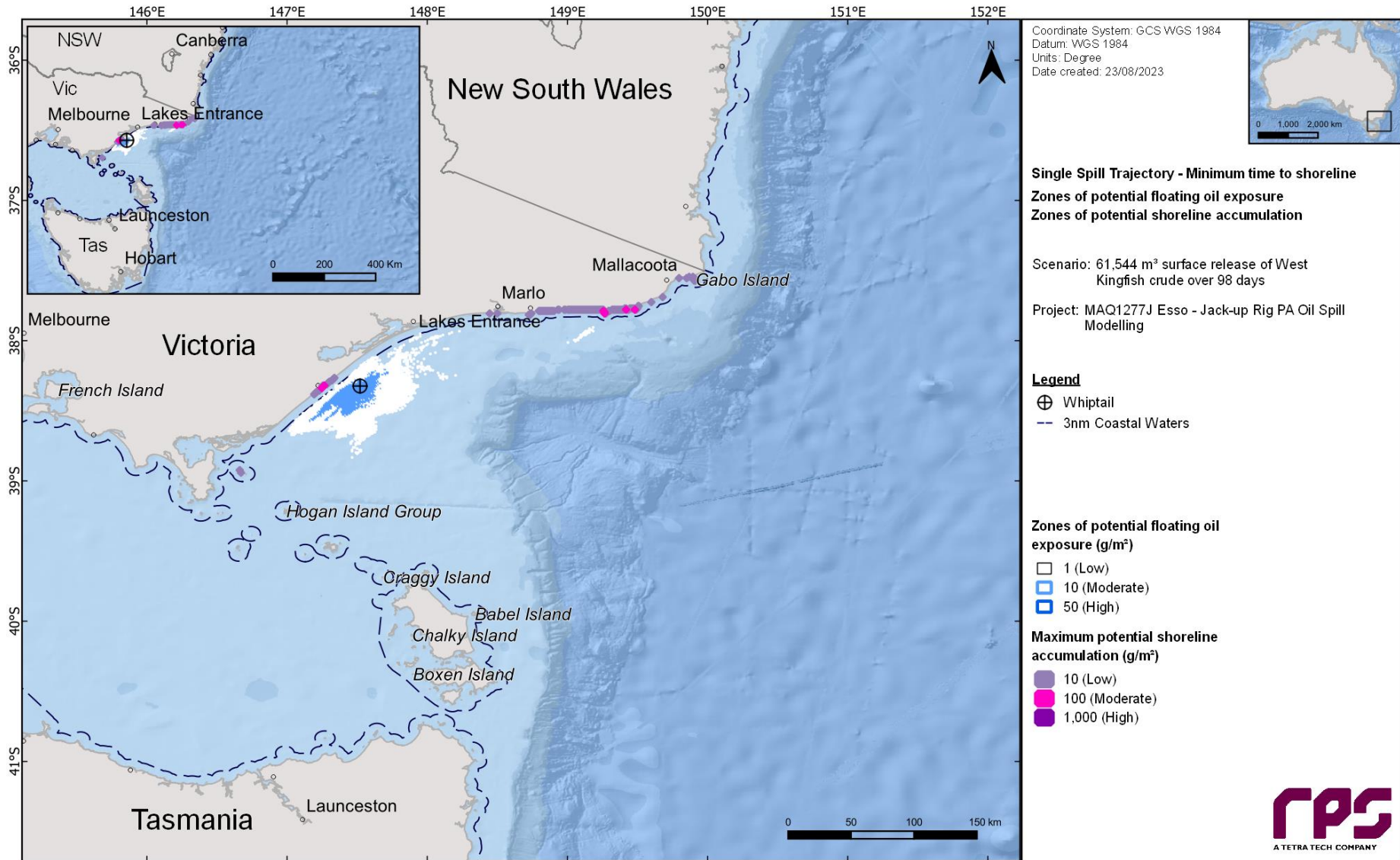


Figure 10-8 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the minimum time before shoreline accumulation above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

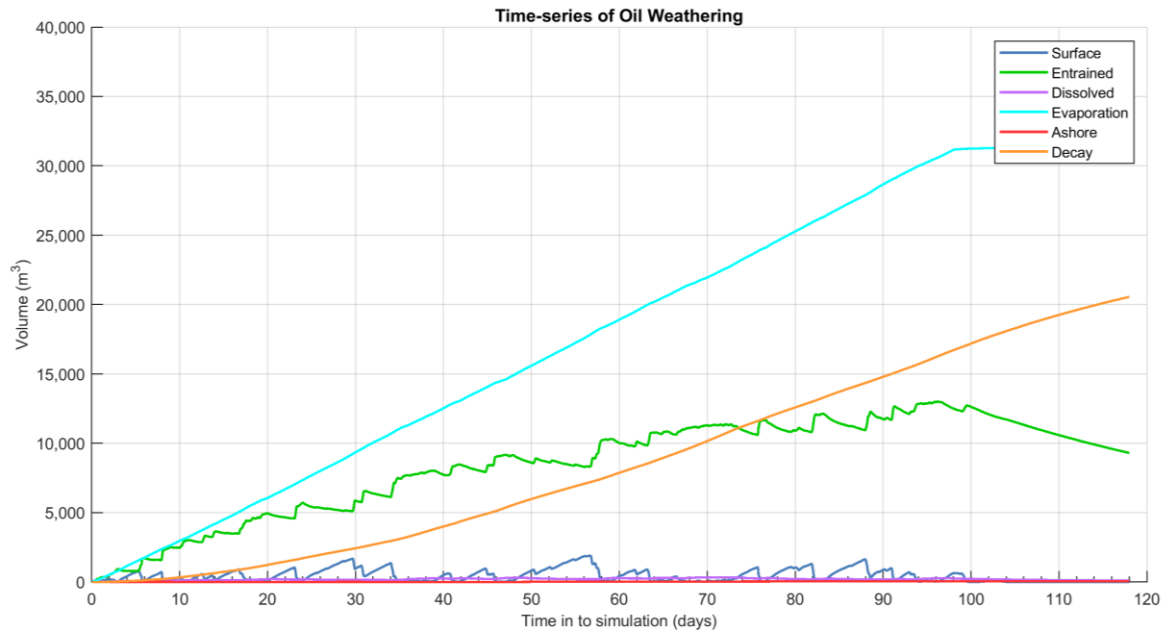


Figure 10-9 Predicted weathering and fates graph for the trajectory with the minimum time before shoreline accumulation above 10 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.2.3 Deterministic Case: Largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m²

The deterministic trajectory that resulted in the largest volume of oil ashore and the longest length of shoreline accumulation above 100 g/m² was as run number 68 which started on the 1st of December 2014. Figure 10-10 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 68.

Figure 10-11 and Figure 10-12 display the time series of the volume of oil accumulating and the length of oil accumulation on shorelines at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds over the 118-day simulation, respectively.

Figure 10-13 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10-12 summarises the mass balance at the end of the simulation.

Table 10-12 Summary of the mass balance at day 98, for the trajectory that resulted in the largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	1,049	82.04	0
Entrained (m ³)	13,618	95.21	10,036
Dissolved (m ³)	332	74.50	63
Evaporation (m ³)	29,729	118.00	29,729
Decay (m ³)	20,604	118.00	20,604
Ashore (m ³)	1,029	100.63	1,029

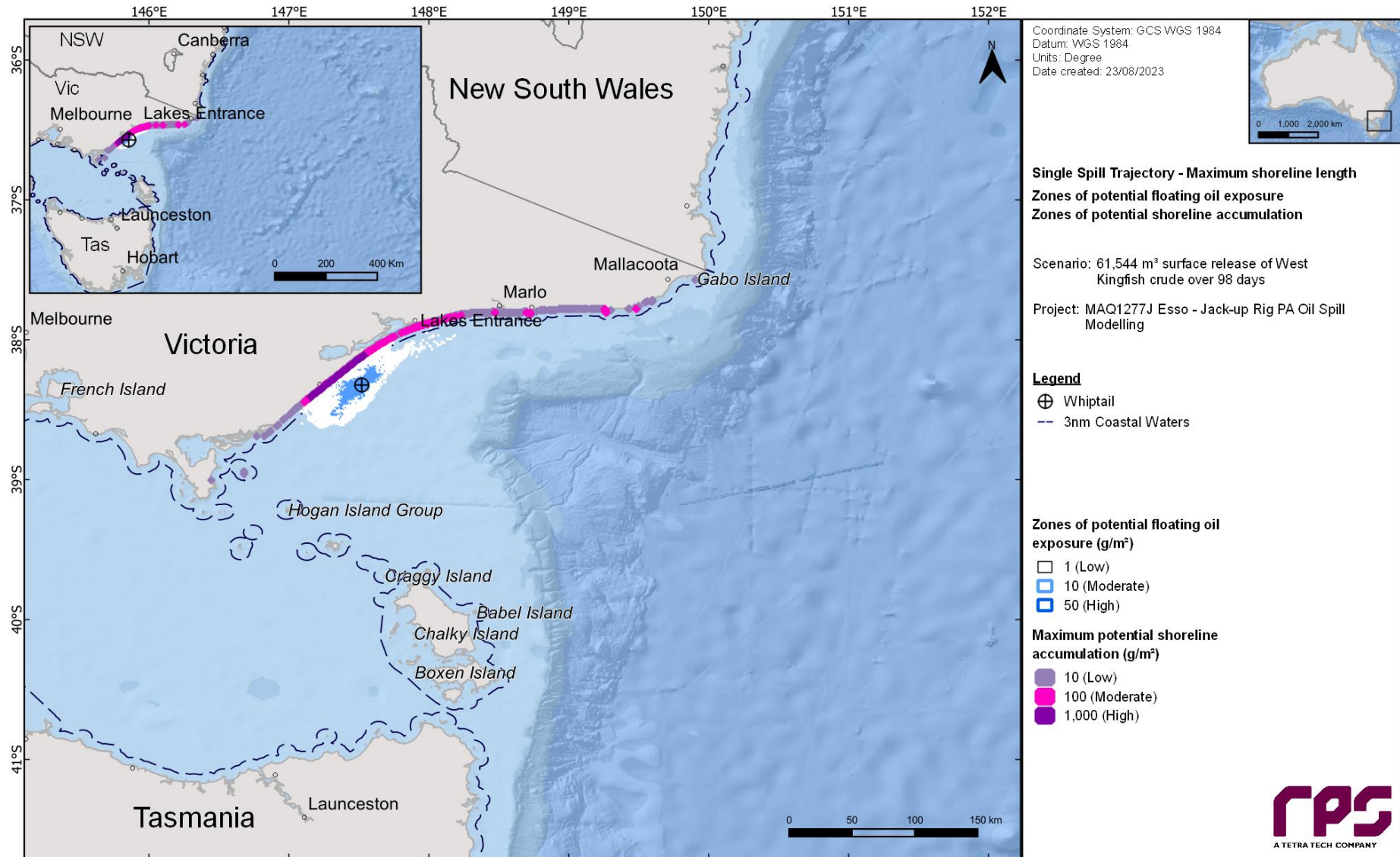


Figure 10-10 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

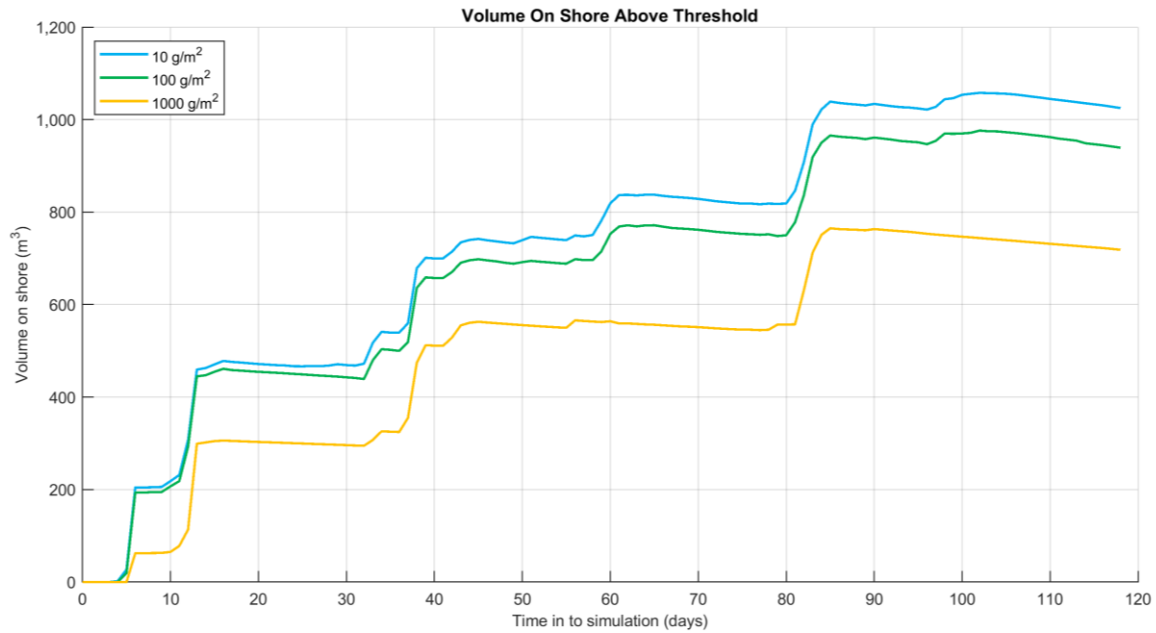


Figure 10-11 Time series of the volume of oil accumulating on shorelines at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds for the trajectory with the largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

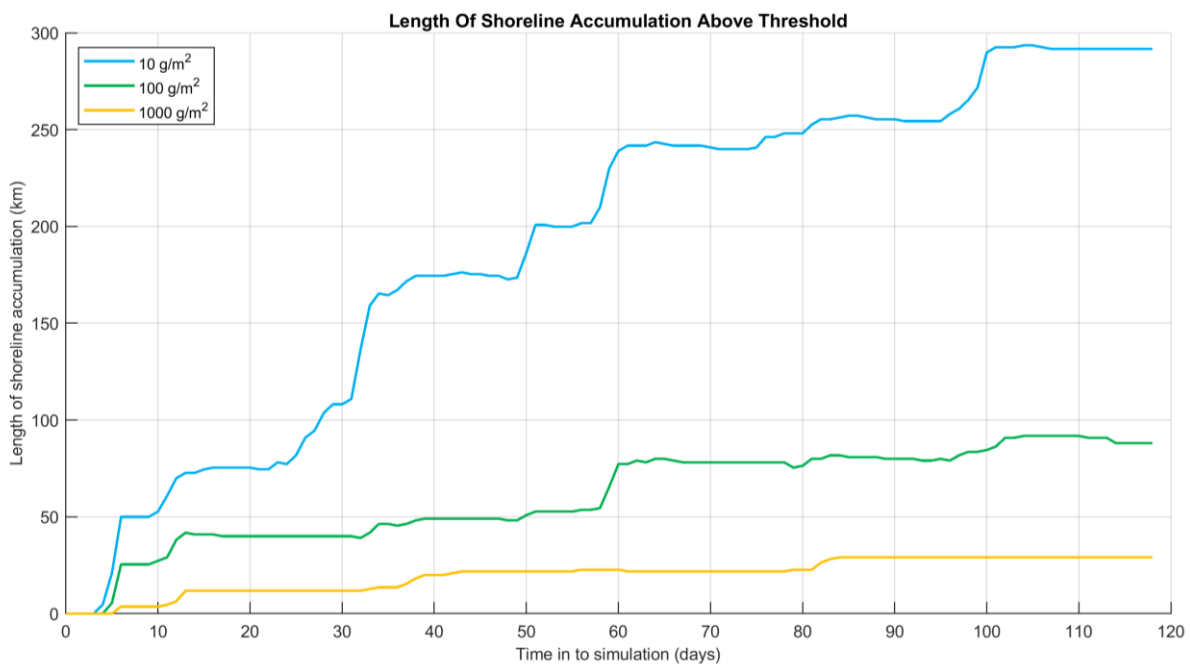


Figure 10-12 Time series of the length of shoreline at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds for the trajectory with the largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

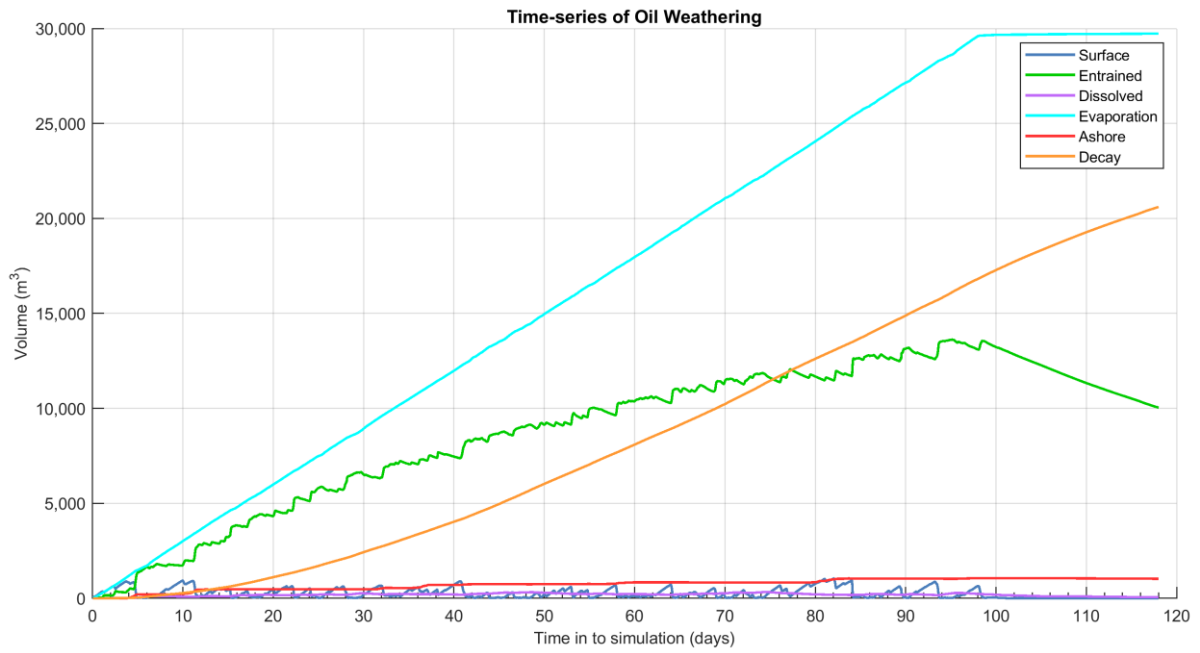


Figure 10-13 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore and longest length of shoreline accumulation above 100 g/m². Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.2.4 Deterministic Case: Largest area of entrained hydrocarbons above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbons above 100 ppb (high threshold) was identified as run number 3, which started on the 18th of April 2016. Figure 10-14 illustrates the zones of potential entrained hydrocarbon exposure for run number 3.

Figure 10-15 displays the time series of the area of entrained hydrocarbons at the low (10 ppb) and moderate (100 ppb) thresholds over the 118-day simulation.

Figure 10-16 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10-13 summarises the mass balance at the peak and at end of the simulation.

Table 10-13 Summary of the mass balance for the trajectory that resulted in the largest area of entrained hydrocarbons above 100 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	1,124	7.71	1
Entrained (m ³)	12,793	98.04	8,593
Dissolved (m ³)	392	87.75	51
Evaporation (m ³)	29,963	118.00	29,963
Decay (m ³)	22,753	118.00	22,753
Ashore (m ³)	34	82.75	28

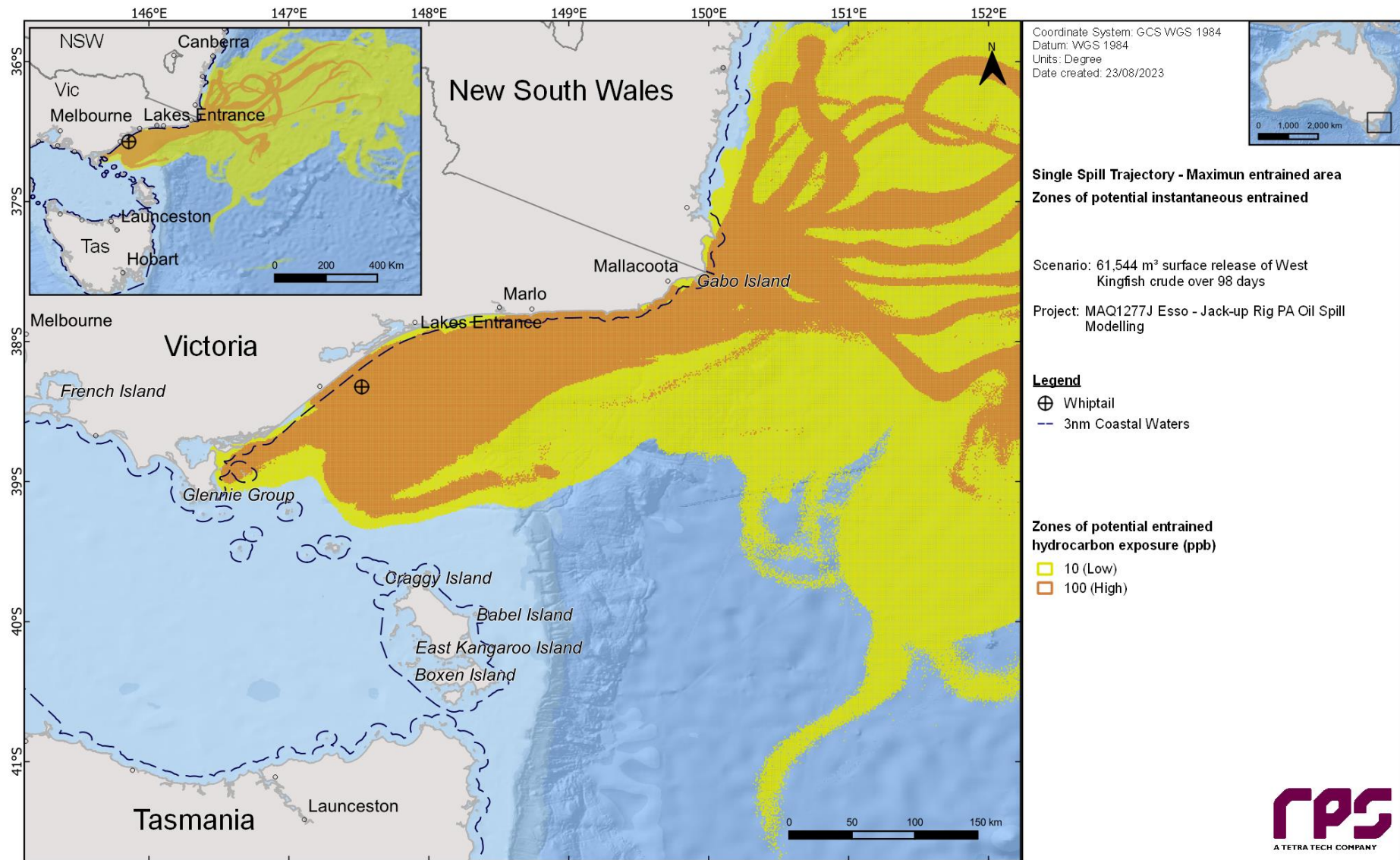


Figure 10-14 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbons above 100 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days, tracked for 118 days.

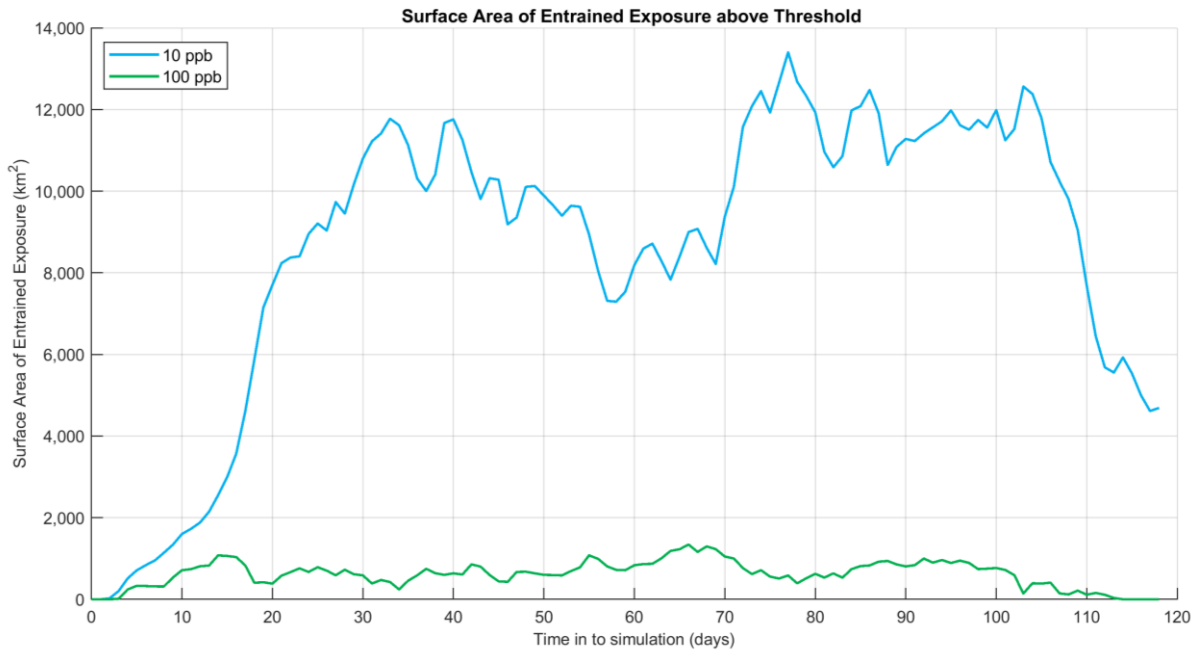


Figure 10-15 Time series of the predicted area of entrained hydrocarbon exposure for the trajectory with the largest area of entrained hydrocarbons above 100 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

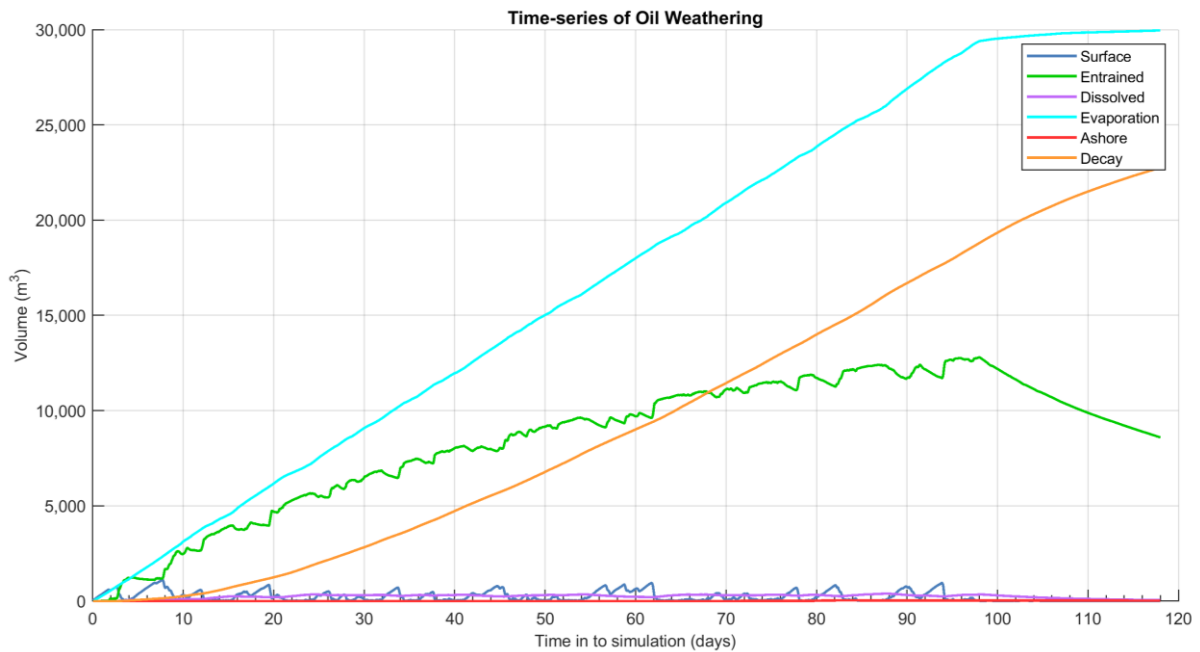


Figure 10-16 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 100 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

10.2.5 Deterministic Case: Largest area of dissolved hydrocarbons above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbons above 10 ppb (low threshold) was identified as run number 28, which started on the 25th of May 2016. Figure 10-17 illustrates the zones of potential dissolved hydrocarbon exposure for run number 28.

Figure 10-18 displays the time series of the area of dissolved hydrocarbons at the low (10 ppb), moderate (50 ppb) and high (400 g/m²) thresholds over the 118-day simulation.

Figure 10-19 presents the fates and weathering graph for the corresponding single spill trajectory and Table 10-14 summarises the mass balance at the peak and at end of the simulation.

Table 10-14 Summary of the mass balance for the trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 50 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	1,495	74.38	2
Entrained (m ³)	12,901	97.04	9,060
Dissolved (m ³)	401	50.79	76
Evaporation (m ³)	29,425	118.00	29,425
Decay (m ³)	22,893	118.00	22,893
Ashore (m ³)	32	45.71	26

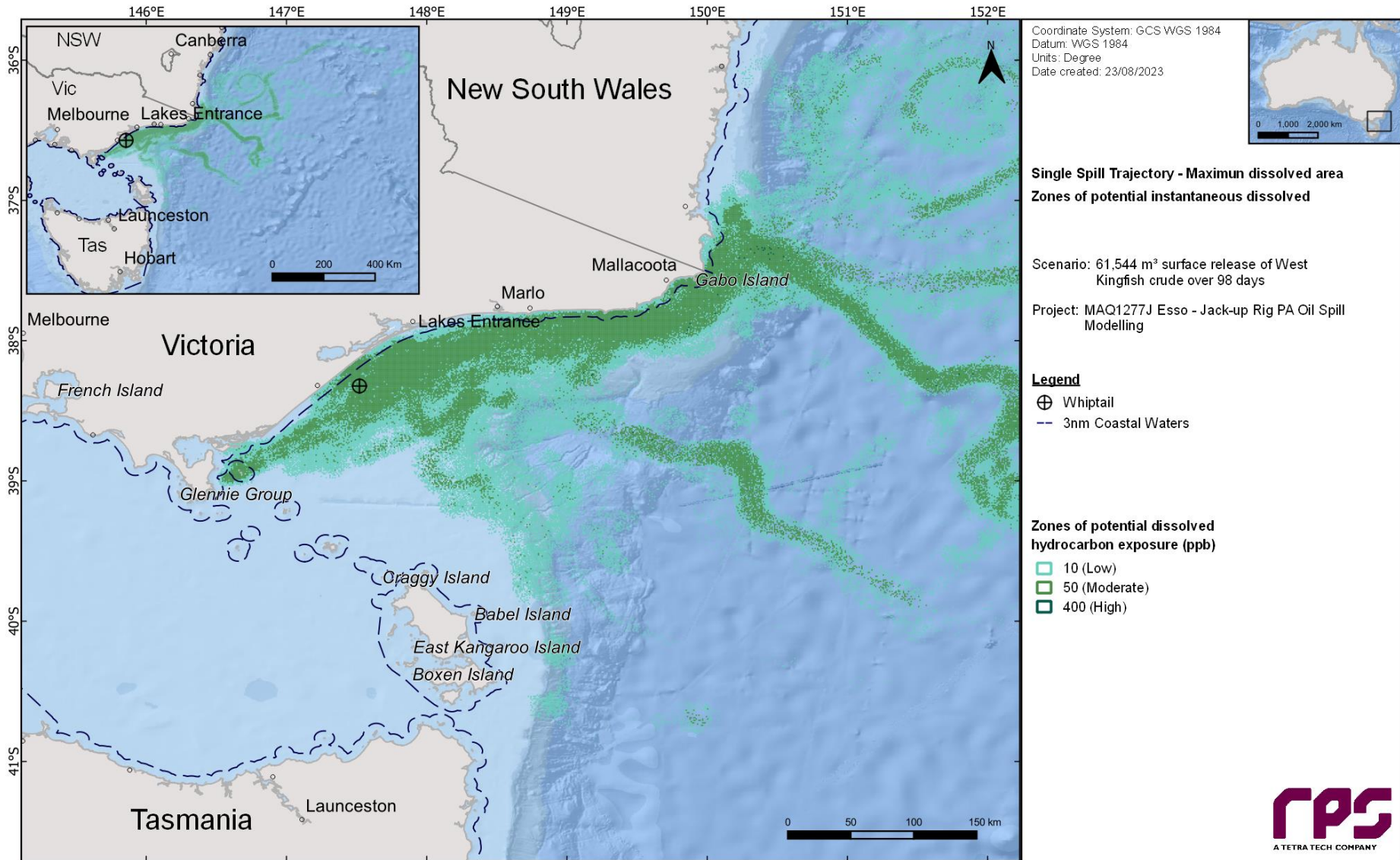


Figure 10-17 Zones of potential dissolved hydrocarbon exposure for the trajectory with the largest area of dissolved hydrocarbons above 50 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days, tracked for 118 days.

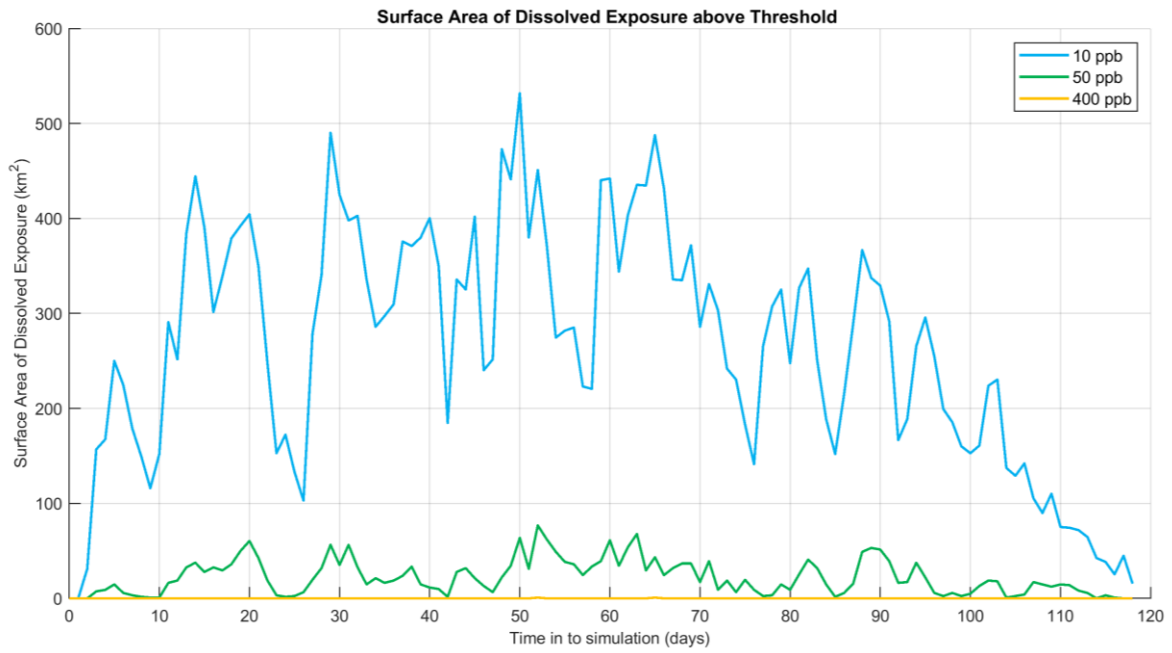


Figure 10-18 Time series of the area of dissolved hydrocarbon exposure for the trajectory with the largest area of dissolved hydrocarbons above 50 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

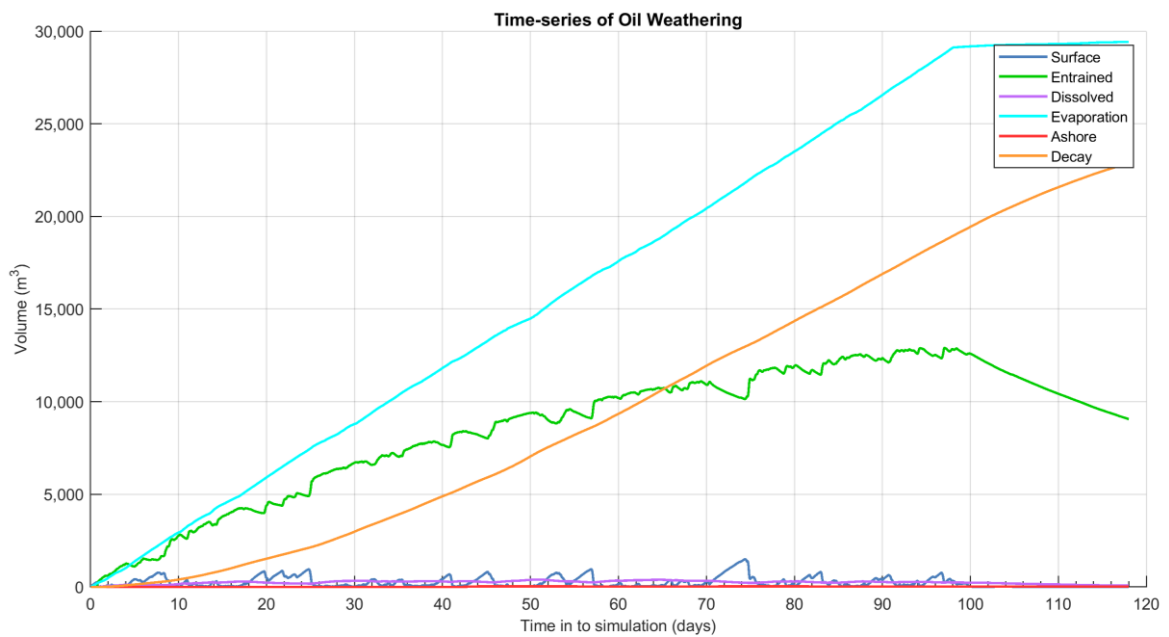


Figure 10-19 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbons above 50 ppb. Results are based on a 61,544 m³ surface release of West Kingfish crude at Whiptail over 98 days.

11 RESULTS: SCENARIO 2 – 22,747 m³ LOSS OF WELL CONTROL FROM MULLOWAY JUR

This scenario examined a 22,747 m³ (149,903 bbl) surface release of Halibut crude over 98 days following a loss of well control at the Mulloway JUR release location. A total of 100 spill simulations were run and tracked for 118 days. The results for all 100 simulations were combined and are presented on an annual basis.

Sections 11.1 and 11.2 present the annual 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 from the release location to the low (≥ 1 g/m²) and moderate (≥ 10 g/m²) exposure levels was 351.8 km (northeast) and 28.9 km (west-southwest), respectively. No floating oil exposure at the high (≥ 50 g/m²) threshold was predicted.

Table 11-2 summarises the potential floating oil exposure to individual receptors during annual conditions.

A total of 27 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 9.2.1), the highest probabilities of low exposure were predicted at the White Shark - Foraging (74%) and White-faced Storm-petrel - Foraging (80%) BIAs. The minimum time before low floating oil exposure to the White Shark - Foraging and White-faced Storm-petrel - Foraging BIAs was 5.79 days for each receptor.

Additionally, 3 IBRAs and 4 IMCRAs were also predicted to be exposed to low exposure floating oil at probabilities ranging between 3–75% and 1–9% (excluding Twofold Shelf IMCRA which the release location resides within), respectively. The minimum time before low exposure for any given IBRA and IMCRA (excluding Twofold Shelf) is 1.88 and 19.38 days, respectively.

Furthermore, nearshore waters of East Gippsland and Wellington LGA, and Golden Beach, Point Hicks and Seaspray sub-LGA all demonstrated probabilities of low exposures of 57% or greater. The minimum time before low exposure at any LGA or Sub-LGA nearshore waters was 2.08 days (Wellington LGA) and 2.08 days (Golden Beach Sub LGA), respectively.

Figure 11-1 presents the zones of potential floating oil exposure for the thresholds under annualised conditions.

Table 11-1 Maximum distance and direction from the release location to floating oil exposure on the sea surface. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Distance and direction travelled	Zones of potential floating oil exposure		
	Low	Moderate	High
Maximum distance (km) from the release location	351.8	28.9	-
Maximum distance (km) from release location (99 th percentile)	314.7	24.7	-
Direction	Northeast	West-southwest	-

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Table 11-2 Summary of the potential floating oil exposure to individual receptors. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Receptor	Probability of floating oil exposure above threshold (%)			Minimum time before floating oil exposure above threshold (days)		
	Low	Moderate	High	Low	Moderate	High
Antipodean Albatross - Foraging	34	-	-	6.5	-	-
Black Petrel - Foraging	6	-	-	55.38	-	-
Black-browed Albatross – Foraging*	100	100	-	0.04	0.04	-
Bullers Albatross – Foraging*	100	100	-	0.04	0.04	-
Campbell Albatross – Foraging*	100	100	-	0.04	0.04	-
Common Diving-petrel – Foraging*	100	100	-	0.04	0.04	-
Crested Tern - Foraging	6	-	-	55.38	-	-
Flesh-footed Shearwater - Foraging	6	-	-	55.38	-	-
Grey Nurse Shark - Foraging	10	-	-	34.29	-	-
Grey Nurse Shark - Migration	17	-	-	17.96	-	-
Humpback Whale - Foraging	24	-	-	13.5	-	-
Indian Yellow-nosed Albatross – Foraging*	100	100	-	0.04	0.04	-
Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	6	-	-	52.63	-	-
Little Penguin - Foraging	15	-	-	6.42	-	-
Pygmy Blue Whale – Distribution*	100	100	-	0.04	0.04	-
Pygmy Blue Whale – Foraging*	100	100	-	0.04	0.04	-
Short-tailed Shearwater – Foraging*	100	100	-	0.04	0.04	-
Shy Albatross – Foraging*	100	100	-	0.04	0.04	-
Sooty Shearwater - Foraging	17	-	-	17.96	-	-
Southern Right Whale – Migration*	100	100	-	0.04	0.04	-
Wandering Albatross – Foraging*	100	100	-	0.04	0.04	-
Wedge-tailed Shearwater - Foraging	36	-	-	6.42	-	-
White Shark – Breeding*	100	100	-	0.04	0.04	-
White Shark – Distribution*	100	100	-	0.04	0.04	-
White Shark - Foraging	74	-	-	5.79	-	-
White-faced Storm-petrel - Breeding	10	-	-	20.29	-	-
White-faced Storm-petrel - Foraging	80	-	-	5.79	-	-

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Receptor		Probability of floating oil exposure above threshold (%)			Minimum time before floating oil exposure above threshold (days)		
		Low	Moderate	High	Low	Moderate	High
IBRA	East Gippsland Lowlands	75	-	-	5.83	-	-
	Gippsland Plain	70	1	-	1.88	71.5	-
	South East Coastal Ranges	3	-	-	59.25	-	-
IMCRA	Batemans Shelf	9	-	-	20.29	-	-
	Flinders	7	-	-	19.38	-	-
	Twofold Shelf*	100	100	-	0.04	0.04	-
	Victorian Embayments	1	-	-	32.92	-	-
KEF	Upwelling East of Eden	95	-	-	2.5	-	-
MNP	Ninety Mile Beach	67	1	-	2.17	71.46	-
	Point Hicks	73	-	-	5.79	-	-
MP	Batemans	1	-	-	89.92	-	-
Nearshore Waters (LGA)	Bega Valley	6	-	-	52.79	-	-
	East Gippsland	78	-	-	5.83	-	-
	Gabo Island	12	-	-	6.42	-	-
	Wellington	70	-	-	2.08	-	-
Nearshore Waters (Sub-LGA)	Bega Valley	6	-	-	52.79	-	-
	Cape Howe / Mallacoota	2	-	-	48.75	-	-
	Clonmel Island	7	-	-	19.38	-	-
	Corringle	4	-	-	15.63	-	-
	Croajingolong (west)	24	-	-	6.13	-	-
	Golden Beach	64	-	-	2.08	-	-
	Lakes Entrance	10	-	-	6.33	-	-
	Lakes Entrance (west)	14	-	-	8	-	-
	Marlo	20	-	-	8.17	-	-
	McLoughlins Beach	5	-	-	34.33	-	-
	Ocean Grange	50	-	-	4.63	-	-
	Point Hicks	69	-	-	5.83	-	-
	Seaspray	57	1	-	2.38	71.5	-
	Snake Island	1	-	-	32.92	-	-

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Receptor	Probability of floating oil exposure above threshold (%)			Minimum time before floating oil exposure above threshold (days)		
	Low	Moderate	High	Low	Moderate	High
Sydenham Inlet	1	-	-	39.54	-	-
Woodside Beach	13	-	-	6.33	-	-
State Waters	New South Wales	6	-	52.63	-	-
	Victoria	99	4	1.17	5.63	-

*The release location resides within the receptor boundaries.

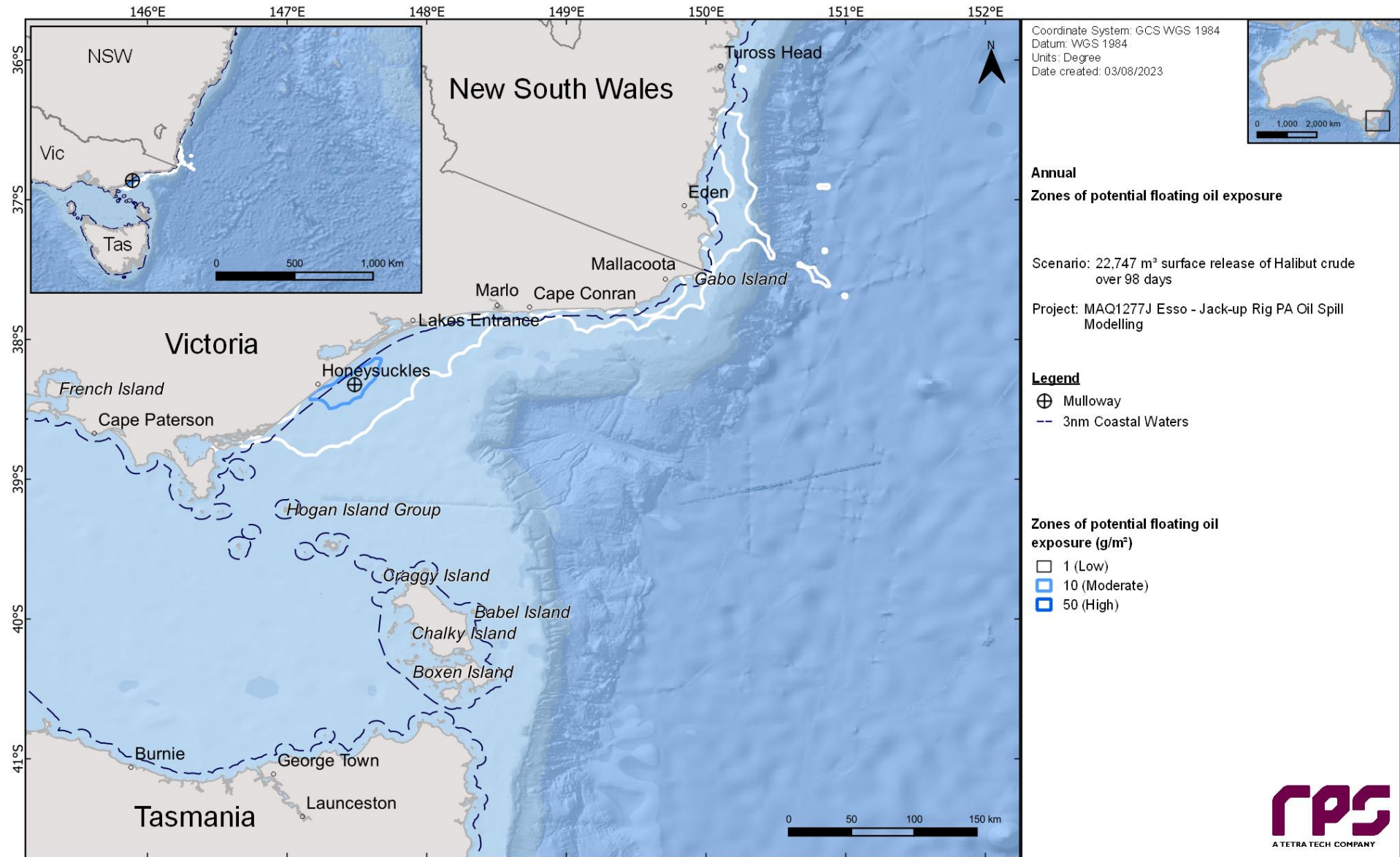


Figure 11-1 Zones of potential floating oil exposure in the event of a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.1.2 Shoreline Accumulation

Table 11-3 presents a summary of the predicted potential accumulation to any shoreline during annualised conditions. The probability of contact to any shoreline at, or above, the low threshold (≥ 10 g/m²) was 100% and the minimum time before shoreline contact at, or above, the low threshold was 1.79 days. The maximum volume ashore for a single spill trajectory was 1,048.2 m³ and the maximum length of shoreline contacted at the low threshold was 361.0 km. Additionally the maximum length of shoreline contacted at the moderate threshold and high ($\geq 1,000$ g/m²) shoreline thresholds was 132.0 km and 26.0 km, respectively.

Table 11-4 summarises the shoreline accumulation on individual receptors during annualised conditions.

The shoreline assessment identified a total of 4 Ramsar areas, 42 LGAs and 35 Sub-LGAs predicted to experience shoreline accumulation at, or above, the low threshold. The probability of low threshold accumulation predicted for Ramsar areas ranged between 1% (Elizabeth and Middleton Reefs Marine National Nature Reserve) and 74% (Gippsland Lakes). The peak volume ashore and the minimum time before low threshold shoreline accumulation was 36.5 m³ and 3.17 days both predicted for Gippsland Lakes Ramsar area. The probability of low threshold accumulation ranged from 1–100% for the LGA receptors, with greatest probability predicted for East Gippsland, and 1–99% for the Sub-LGA receptors, with the greatest probability predicted for Point Hicks. The LGA and Sub-LGA peak volumes ashore were predicted for the Wellington LGA (886.7 m³) and Seaspray Sub-LGA (404.5 m³) receptors, respectively. Additionally, the minimum times before low threshold shoreline accumulation at any LGA and Sub-LGA was 1.79 days (Wellington LGA and Seaspray Sub-LGA).

Figure 11-2 illustrates the maximum potential shoreline loading.

Table 11-3 Summary of oil accumulation on any shoreline. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Shoreline Statistics	Annual
Probability of accumulation on any shoreline (%) at the low threshold	100
Absolute minimum time before accumulation on any shoreline (days) at the low threshold	1.79
Maximum total volume of hydrocarbons ashore (m ³) ^	1,048.2
Average total volume of hydrocarbons ashore (m ³) ^	257.4
Maximum length of the shoreline at 10 g/m² (km)	361.0
Average shoreline length (km) at 10 g/m² (km)	196.7
Maximum length of the shoreline at 100 g/m² (km)	132.0
Average shoreline length (km) at 100 g/m² (km)	39.2
Maximum length of the shoreline at 1,000 g/m² (km)	26.0
Average shoreline length (km) at 1,000 g/m² (km)	5.9

^the total volume does not consider any weathering processes that the oil has undergone once stranded on the shoreline.

Table 11-4 Summary of oil accumulation on individual shoreline receptors. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Shoreline Receptor	Probability of shoreline accumulation (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m ²)		Volume on shoreline (m ³)		Mean length of shoreline contacted above threshold (km)			Maximum length of shoreline contacted above threshold (km)			
	Low	Moderate	High	Low	Moderate	High	Mean	Peak	Mean	Peak	Low	Moderate	High	Low	Moderate	High	
Ramsar	Corner Inlet	45	7	-	6.71	20.29	-	6	355	2.6	20.4	6.6	1.4	-	26.4	2.7	-
	East Coast Cape Barren Island Lagoons	2	-	-	74.25	-	-	4	17	0.1	0.4	0.9	-	-	0.9	-	-
	Elizabeth and Middleton Reefs Marine National Nature Reserve	1	-	-	74.63	-	-	4	10	0.1	0.3	0.9	-	-	0.9	-	-
	Gippsland Lakes	74	32	-	3.17	6.75	-	22	409	8.7	36.5	14.3	3.4	-	31.8	10.9	-
Shoreline (LGA)	Anser Island	1	-	-	82.04	-	-	6	17	0.1	0.2	0.9	-	-	0.9	-	-
	Babel Island	6	-	-	51.42	-	-	5	22	0.3	1.2	1.5	-	-	1.8	-	-
	Badger Island	2	-	-	90.29	-	-	4	11	0.1	0.5	0.9	-	-	0.9	-	-
	Bega Valley	78	17	-	7.5	31.88	-	11	462	5.4	26.8	11.9	2.2	-	47.2	3.6	-
	Break O'Day	1	-	-	56.13	-	-	4	10	0.2	1.3	1.8	-	-	1.8	-	-
	Cape Barren Island	9	-	-	48.58	-	-	5	44	0.7	2.4	3.6	-	-	5.5	-	-
	Central Coast	1	-	-	108.63	-	-	5	11	0.2	0.6	0.9	-	-	0.9	-	-
	Clarke Island	1	-	-	102.79	-	-	4	13	0.1	0.4	0.9	-	-	0.9	-	-
	Craggy Island	8	-	-	62.75	-	-	8	29	0.2	0.6	1.1	-	-	1.8	-	-
	Curtis Island	9	-	-	29.33	-	-	6	18	0.3	0.8	1.4	-	-	2.7	-	-
	East Gippsland	100	94	34	2.5	6	22.29	36	2,941	91.6	257	96.3	14.3	2.1	194.5	67.2	3.6
	Eurobodalla	20	-	-	18.08	-	-	6	89	2	17.4	7.3	-	-	36.3	-	-
	Flinders Island	15	-	-	48.71	-	-	4	34	1.1	4.3	3.1	-	-	7.3	-	-
	Gabo Island	83	16	-	6.46	9.79	-	32	379	2.2	11.5	3.5	1.7	-	5.5	2.7	-
	Hogan Island Group	14	-	-	25.63	-	-	7	93	0.7	4	4.3	-	-	9.1	-	-
	Inner Sister Island	5	-	-	74.75	-	-	6	22	0.3	1.1	1.6	-	-	2.7	-	-
	Kanowna Island	3	-	-	52.17	-	-	6	17	0.2	0.3	0.9	-	-	0.9	-	-
	Kent Island Group	23	-	-	28.92	-	-	6	53	1.7	6.7	5.5	-	-	15.4	-	-
	Kiama	2	-	-	52.25	-	-	4	17	0.2	0.9	1.4	-	-	1.8	-	-
	Lake Macquarie	1	-	-	118	-	-	4	12	0.1	0.1	0.9	-	-	0.9	-	-
	Lord Howe Island	1	-	-	40.58	-	-	4	11	0.1	0.3	0.9	-	-	0.9	-	-
	Middleton Reef	1	-	-	74.63	-	-	6	10	< 0.1	0.1	0.9	-	-	0.9	-	-
	Moncoeur Islands	5	-	-	24.25	-	-	6	15	0.1	0.3	1.1	-	-	1.8	-	-
	Montague Island	29	5	-	19.21	56.25	-	18	237	1.1	6.9	2.6	1.5	-	5.5	1.8	-
	Outer Sister Island	7	-	-	73	-	-	5	23	0.3	1.5	1.7	-	-	4.5	-	-
	Pasco Group	2	-	-	62.96	-	-	5	17	0.1	0.4	0.9	-	-	0.9	-	-
	Preservation Island	1	-	-	108.21	-	-	4	15	< 0.1	0.2	0.9	-	-	0.9	-	-
	Prime Seal Island	1	-	-	109.33	-	-	4	12	0.2	0.5	0.9	-	-	0.9	-	-
	Pyramid Island	4	-	-	61.42	-	-	10	23	0.1	0.3	0.9	-	-	0.9	-	-
	Randwick	2	-	-	60.96	-	-	5	13	0.1	0.3	0.9	-	-	0.9	-	-
Rodondo Island	2	-	-	16.63	-	-	5	11	< 0.1	0.2	0.9	-	-	0.9	-	-	
Seal Islands	35	-	-	11.79	-	-	10	75	0.6	2.8	2.3	-	-	5.5	-	-	
Shell Harbour	6	-	-	29.83	-	-	6	33	0.2	0.8	1.5	-	-	2.7	-	-	
Shellback Island	1	-	-	110.13	-	-	6	15	0.1	0.3	0.9	-	-	0.9	-	-	
Shoal Haven	15	2	-	29.88	52.58	-	6	149	2.3	35.8	9.9	3.6	-	61.8	3.6	-	
Skull Rock	1	-	-	52.17	-	-	6	11	< 0.1	0.2	0.9	-	-	0.9	-	-	
South Gippsland	32	4	-	8.75	34	-	7	126	3.5	20.5	10	1.8	-	29.1	3.6	-	

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Shoreline Receptor	Probability of shoreline accumulation (%)			Minimum time before shoreline accumulation (days)			Load on shoreline (g/m ²)		Volume on shoreline (m ³)		Mean length of shoreline contacted above threshold (km)			Maximum length of shoreline contacted above threshold (km)		
	Low	Moderate	High	Low	Moderate	High	Mean	Peak	Mean	Peak	Low	Moderate	High	Low	Moderate	High
Sutherland Shire	8	-	-	37.21	-	-	5	28	0.4	1.7	1.6	-	-	2.7	-	-
Vansittart Island	1	-	-	64.21	-	-	4	13	0.1	0.3	0.9	-	-	0.9	-	-
Waverly	1	-	-	94.04	-	-	4	11	0.1	0.2	0.9	-	-	0.9	-	-
Wellington	96	77	30	1.79	2.17	3.67	87	3,948	158.9	886.7	61.2	27.6	7.5	139	72.7	23.6
Wollongong	7	-	-	40.58	-	-	5	22	0.2	0.5	1	-	-	1.8	-	-
Bega Valley	78	17	-	7.5	31.88	-	11	462	5.4	26.8	11.9	2.2	-	47.2	3.6	-
Cape Conran	96	13	-	5.42	18	-	13	309	2.9	11.2	6.6	1.4	-	17.3	3.6	-
Cape Howe / Mallacoota	86	9	-	6.5	49.38	-	12	215	2.4	9.6	5.6	1	-	17.3	1.8	-
Cape Liptrap (NW)	4	-	-	55.79	-	-	7	27	1	1.6	3	-	-	3.6	-	-
Central Coast	1	-	-	108.63	-	-	5	11	0.2	0.6	0.9	-	-	0.9	-	-
Clonmel Island	54	9	-	6.21	15.54	-	11	355	3.7	28	7.3	3.1	-	26.4	6.4	-
Corner Inlet	20	2	-	8.75	34	-	8	115	0.3	2	1	0.9	-	1.8	0.9	-
Corringle	78	19	-	5.29	8.96	-	21	447	6.8	42.7	11.3	4.4	-	26.4	15.4	-
Croajingolong (East)	53	-	-	9.67	-	-	7	62	1	4.8	3.8	-	-	13.6	-	-
Croajingolong (West)	94	62	-	5.54	6.63	-	28	955	7.3	33.1	9.4	1.5	-	30	6.4	-
Eurobodalla	20	-	-	18.08	-	-	6	89	2	17.4	7.3	-	-	36.3	-	-
Golden Beach	81	66	22	1.83	2.17	3.67	194	3,841	67.7	381.4	16.2	10.3	5.2	28.2	18.2	12.7
Kiama	2	-	-	52.25	-	-	4	17	0.2	0.9	1.4	-	-	1.8	-	-
Lake Macquarie	1	-	-	118	-	-	4	12	0.1	0.1	0.9	-	-	0.9	-	-
Lake Tyers Beach	71	28	-	3.67	8.08	-	33	560	11.8	77.4	15.1	6.6	-	29.1	20	-
Lakes Entrance	70	33	-	5.75	6.75	-	40	569	14.4	67.1	15.9	8.4	-	29.1	17.3	-
Lakes Entrance (West)	77	41	-	2.46	9.13	-	38	453	13.9	58.7	13.8	7.4	-	28.2	17.3	-
Marlo	88	67	4	3.71	8.5	46.58	35	1,378	12.2	42.3	16.1	2.8	0.9	28.2	8.2	0.9
McLoughlins Beach	57	12	-	6.5	15.46	-	17	309	4.4	29.2	7.5	4.8	-	17.3	12.7	-
Ocean Grange	84	58	6	1.96	2.88	44.21	76	1,576	27.8	146.4	14.6	8.4	2	29.1	15.4	3.6
Point Hicks	99	91	34	3.5	6	22.29	103	2,941	28.7	101.6	11.8	3.4	2	27.3	6.4	2.7
Port Welshpool	3	-	-	25.33	-	-	4	17	0.2	0.6	0.9	-	-	0.9	-	-
Randwick	2	-	-	60.96	-	-	5	13	0.1	0.3	0.9	-	-	0.9	-	-
Seaspray	86	61	21	1.79	2.29	6.13	160	3,948	60.6	404.5	15.9	10.4	4.8	30.9	20.9	10
Shell Harbour	6	-	-	29.83	-	-	6	33	0.2	0.8	1.5	-	-	2.7	-	-
Shoal Haven	15	2	-	29.88	52.58	-	6	149	2.3	35.8	9.9	3.6	-	61.8	3.6	-
Snake Island	31	1	-	7.33	98.75	-	6	120	1.4	6.9	3.9	0.9	-	11.8	0.9	-
Sutherland Shire	8	-	-	37.21	-	-	5	28	0.4	1.7	1.6	-	-	2.7	-	-
Sydenham Inlet	85	-	-	5.29	-	-	12	85	3.8	16.9	12.9	-	-	25.4	-	-
Waverly	1	-	-	94.04	-	-	4	11	0.1	0.2	0.9	-	-	0.9	-	-
Wilson's Promontory (East)	26	4	-	9.71	36.54	-	9	126	2.3	12.8	6.5	1.4	-	16.4	2.7	-
Wilson's Promontory (NE)	27	-	-	9.13	-	-	7	65	1.1	5.6	4.1	-	-	11.8	-	-
Wilson's Promontory (West)	5	-	-	64.17	-	-	5	17	0.5	1.1	1.1	-	-	1.8	-	-
Wollongong	7	-	-	40.58	-	-	5	22	0.2	0.5	1	-	-	1.8	-	-
Woodside Beach	64	26	-	3	4.13	-	26	523	7.9	47.9	10.1	4.5	-	20.9	12.7	-

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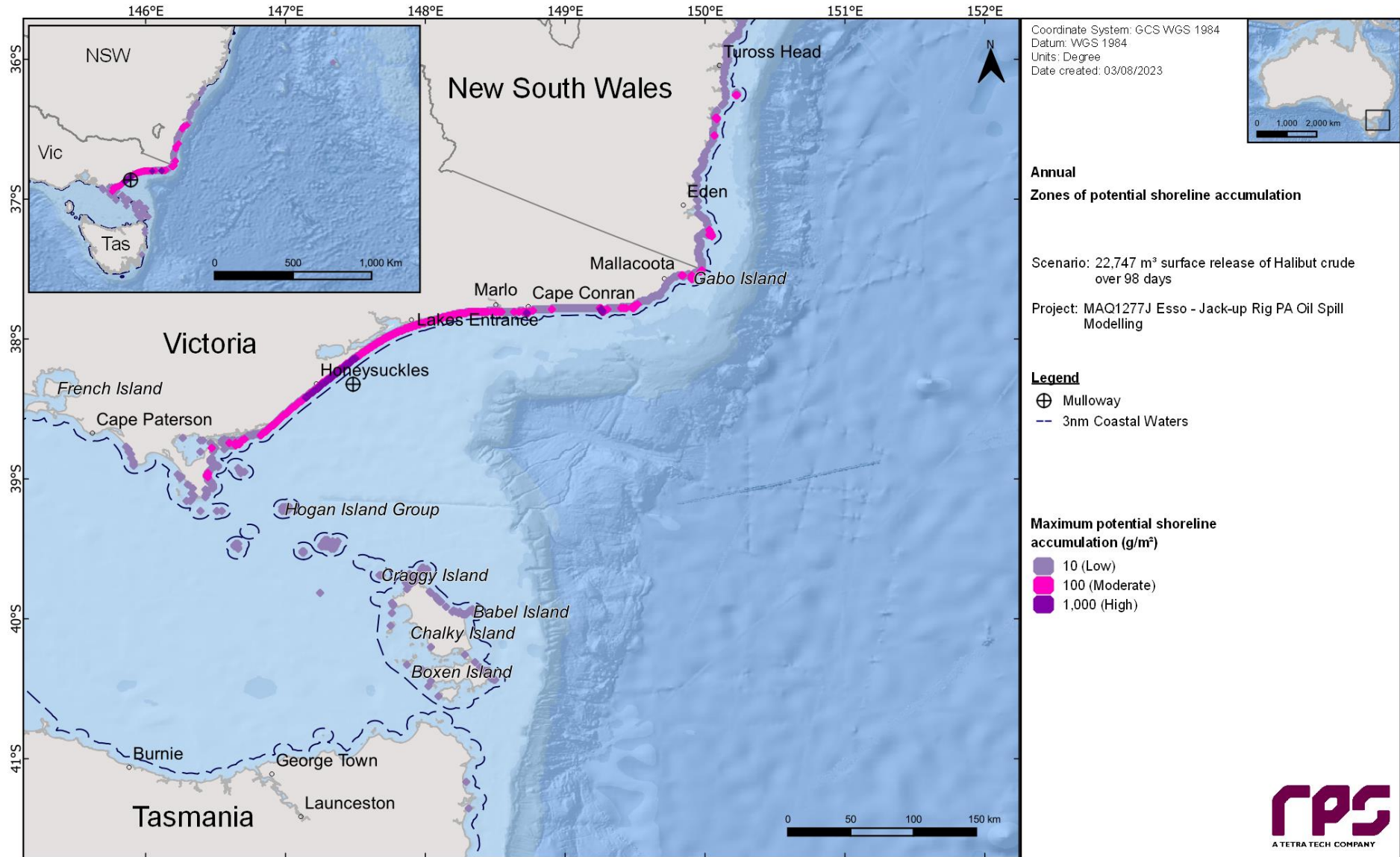


Figure 11-2 Maximum potential shoreline loading in the event of a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.1.3 In-water exposure

11.1.3.1 Dissolved Hydrocarbons

Table 11-5 summarises the maximum distance and direction from the release location to dissolved hydrocarbon exposure in the 0-10 m depth layer at the low (≥ 10 ppb), moderate (≥ 50 ppb) and high (≥ 400 ppb) thresholds levels. The maximum distances to the low and moderate thresholds from the release location were predicted to be 1,500 km (northeast), 1,130 km (east-northeast) and 489 km (east), respectively.

Table 11-6 summarises the probability of exposure to individual receptors from dissolved hydrocarbons in the 0-10 m layer for the annualised assessment.

In the surface (0-10 m) depth layer, a total of 51 BIAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 9.2.1), the highest probabilities of exposure to the low and moderate dissolved hydrocarbons were predicted for the Antipodean Albatross - Foraging (100% and 80%), Little Penguin - Foraging (87% and 49%), White Shark - Foraging (100% and 92%), White-faced Storm-petrel - Foraging (100% and 92%) BIAs.

Additionally, 8 AMPs, 12 IBRAs and 10 IMCRAs were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold with probabilities of low exposure ranging between 2–44%, 1–99% and 1–68% (excluding Twofold Shelf IMCRA (100%) which the release location resides within), respectively. The highest probability predicted at any of the AMPs, IBRAs and IMCRAs (excluding Twofold Shelf IMCRA) were predicted for the East Gippsland AMP, East Gippsland Lowlands IBRA and Flinders IMCRA.

Eight KEFs were predicted to be exposed to dissolved hydrocarbons at, or above the low threshold with probabilities ranging between 1–100%. Furthermore, 5 MNP (3–99%), 2 Ramsar areas (48–51%), 8 RSBs (1–99%), 42 LGA nearshore waters (1–99%), 30 Sub-LGA nearshore waters (2–99%) and 3 State Waters (26–100%) were predicted to be exposed to dissolved hydrocarbons at, or above, the low threshold.

Figure 11-3 presents the zones of potential dissolved hydrocarbon exposure for the 0-10 m depth layer, for each threshold assessed.

Table 11-5 Maximum distance and direction from the release location to dissolved hydrocarbon exposure thresholds in the 0 – 10 m depth layer. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Distance and direction travelled	Zones of potential dissolved hydrocarbon exposure		
	Low	Moderate	High
Maximum distance (km) from the release location	1,500	1,130	489
Maximum distance (km) from release location (99 th percentile)	1,056	753	312
Direction	Northeast	East-northeast	East

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Table 11-6 Probability of dissolved hydrocarbons exposure to marine based receptors in the 0–10 m depth. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
AMP	Beagle	207.7	27	6	-	8.71	9.33	-
	Central Eastern	33.7	2	-	-	28.33	-	-
	East Gippsland	394.5	44	8	-	8.58	10.33	55.92
	Flinders	245.6	8	2	-	15.67	21.04	-
	Freycinet	64.2	2	1	-	22.46	68.33	-
	Hunter	37.2	3	-	-	52.25	-	-
	Jervis	93.2	10	2	-	17.96	20.04	-
	Lord Howe	57.9	2	1	-	33.63	35.21	-
BIA	Antipodean Albatross - Foraging	947.1	100	80	3	1.42	1.58	8.13
	Black Noddy - Foraging	11.3	1	-	-	96.29	-	-
	Black Petrel - Foraging	354.5	33	10	-	5.79	7.33	-
	Black-browed Albatross - Foraging*	947.1	100	82	3	0.04	0.46	8.13
	Black-faced Cormorant - Foraging	27.7	2	-	-	54.04	-	-
	Black-winged Petrel - Foraging	22.6	2	-	-	38.63	-	-
	Bullers Albatross - Foraging*	514.9	100	82	1	0.04	0.46	11.88
	Campbell Albatross - Foraging*	947.1	100	82	3	0.04	0.46	8.13
	Common Diving-petrel - Foraging*	787.8	100	82	3	0.04	0.46	10.46
	Common Noddy - Foraging	28.6	2	-	-	37.96	-	-
	Crested Tern - Breeding	252.4	30	5	-	11.46	15.25	-
	Crested Tern - Foraging	296.7	32	7	-	7	8.08	-
	Flesh-footed Shearwater - Foraging	354.5	33	10	-	5.79	7.33	-
	Great-winged Petrel - Foraging	304.3	33	8	-	5.83	7.83	-
	Grey Nurse Shark - Foraging	847.2	79	32	2	3.88	6.17	42
	Grey Nurse Shark - Migration	604.5	76	35	1	2.71	2.88	29.29
	Grey Ternlet - Foraging	22.6	2	-	-	38	-	-
Humpback Whale - Foraging	847.2	83	35	2	2.46	2.58	8.13	

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Humpback Whale - Migration	129.8	3	2	-	27.63	27.75	-
Indian Yellow-nosed Albatross - Foraging*	947.1	100	82	3	0.04	0.46	8.13
Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	630.6	83	39	2	3.96	7.25	41.21
Kermadec Petrel - Foraging	14.6	2	-	-	38.13	-	-
Little Penguin - Breeding	294	31	7	-	10.25	12.67	-
Little Penguin - Foraging	722.2	87	49	2	2.25	4.5	21.38
Little Shearwater - Foraging	22.6	2	-	-	38	-	-
Masked Booby - Foraging	22.6	2	-	-	38	-	-
Northern Giant Petrel - Foraging	295	33	8	-	5.83	7.83	-
Providence Petrel - Foraging	22.6	2	-	-	38	-	-
Pygmy Blue Whale - Distribution*	947.1	100	92	15	0.04	0.46	5.29
Pygmy Blue Whale - Foraging*	947.1	100	92	15	0.04	0.46	5.29
Red-tailed Tropicbird - Foraging	22.6	2	-	-	38	-	-
Short-tailed Shearwater - Breeding	32.1	12	-	-	19.21	-	-
Short-tailed Shearwater - Foraging*	847.2	100	53	2	0.04	0.46	8.13
Shy Albatross - Foraging*	947.1	100	92	15	0.04	0.46	5.29
Sooty Shearwater - Foraging	847.2	72	26	2	2.92	2.96	8.13
Sooty Tern - Foraging	22.6	2	-	-	38.33	-	-
Southern Giant Petrel - Foraging	295	33	8	-	5.83	7.83	-
Southern Right Whale - Connecting Habitat	46.4	5	-	-	44.21	58.63	-
Southern Right Whale - Migration*	947.1	100	92	15	0.04	0.46	5.29
Wandering Albatross - Foraging*	947.1	100	82	3	0.04	0.46	8.13
Wedge-tailed Shearwater - Foraging	847.2	87	49	2	2.25	2.42	8.13
White Shark - Breeding*	726.3	100	82	2	0.04	0.46	10.46
White Shark - Distribution*	947.1	100	92	15	0.04	0.46	5.29
White Shark - Foraging	947.1	100	92	15	1.71	1.92	5.29
White Tern - Foraging	14.6	1	-	-	74.33	-	-
White-bellied Storm Petrel - Foraging	22.6	2	-	-	38.33	-	-
White-capped Albatross - Foraging	295	33	8	-	5.83	7.83	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
	White-faced Storm-petrel - Breeding	507.6	54	12	2	4.13	5.54	55.25
	White-faced Storm-petrel - Foraging	947.1	100	92	15	1.42	1.42	5.29
	White-fronted Tern - Foraging	24.3	2	-	-	54.04	-	-
	Wilson's Storm Petrel - Migration	295	33	8	-	5.83	7.83	-
IBRA	Bateman	218.6	24	3	-	12.08	21.88	-
	East Gippsland Lowlands	797.2	99	92	15	2.29	3.42	5.29
	Flinders	101.4	25	3	-	14.96	23.08	-
	Gippsland Plain	726.3	71	53	1	1.13	1.63	15.63
	Illawarra	68.9	3	1	-	26.88	52.42	-
	Jervis	82.1	9	2	-	18.42	50.71	-
	Pittwater	12.7	1	-	-	50.54	-	-
	South East Coastal Ranges	302.2	13	4	-	11.83	18.92	-
	Strzelecki Ranges	12.3	2	-	-	64.58	-	-
	Sydney Cataract	13.9	2	-	-	37.13	-	-
	Tasmanian South East	10.9	1	-	-	58.79	-	-
	Wilson's Promontory	224.2	38	10	-	5.46	5.79	-
IMCRA	Batemans Shelf	507.6	52	12	2	4.42	5.54	55.25
	Boags	17.8	2	-	-	54.04	-	-
	Central Bass Strait	155.1	13	3	-	12.46	13.25	-
	Central Victoria	27.7	3	-	-	30.17	-	-
	Flinders	477.1	68	39	1	2.13	4.38	85.33
	Freycinet	53.3	4	1	-	22.75	24.13	-
	Hawkesbury Shelf	31	2	-	-	26.21	-	-
	Manning Shelf	17.1	1	-	-	44.42	-	-
	Twofold Shelf*	947.1	100	92	15	0.04	0.46	5.29
Victorian Embayments	472	48	21	1	4.38	5.04	85.04	
KEF	Big Horseshoe Canyon	244.1	44	7	-	7.88	16.63	-
	Canyons on the eastern continental slope	277.6	30	4	-	5.83	8.83	-
	Lord Howe seamount chain	11	1	-	-	74.33	-	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
	Seamounts South and east of Tasmania	16.3	1	-	-	25.63	-	-
	Shelf rocky reefs	206.5	31	7	-	7.5	11.54	-
	Tasman Front and eddy field	97.5	4	1	-	11.17	23.58	-
	Tasmantid seamount chain	33.7	2	-	-	50.5	-	-
	Upwelling East of Eden	947.1	100	92	15	0.79	0.79	5.29
MNP	Cape Howe	550.5	87	45	1	3.79	7.08	41.08
	Corner Inlet	21.1	3	-	-	26.46	-	-
	Ninety Mile Beach	354.8	79	51	-	0.79	1.25	57.63
	Point Hicks	797.2	99	92	15	2.21	3.38	5.29
	Wilson's Promontory	162	20	4	-	10.42	12	-
MP	Batemans	252.4	30	5	-	11.46	15.25	-
	Jervis Bay	48.2	4	-	-	25.13	51.63	-
MS	Beware Reef	573.5	99	70	1	3.17	4.63	73.58
NP	Kent Group	74.7	17	1	-	16.29	22.67	-
Ramsar	Corner Inlet	472	48	22	1	4.38	5.04	85.04
	Gippsland Lakes	290.3	51	24	-	6.13	6.38	-
RSB	Beware Reef	573.5	99	70	1	3.08	4.63	73.58
	Cody Bank	13	1	-	-	49.88	-	-
	Cutter Rock	37.6	11	-	-	19.58	-	-
	Endeavour Reef	34	2	-	-	37.33	-	-
	New Zealand Star Bank	484.1	92	57	1	2.04	4.13	25.88
	Wakitipu Rock	23.7	3	-	-	25	43.42	-
	Warrego Rock	22.7	3	-	-	29.42	-	-
	Wright Rock	26.3	4	-	-	37.29	-	-
Nearshore Waters (LGA)	Anser Island	70.6	5	1	-	11.42	22.96	-
	Babel Island	12	1	-	-	55.33	-	-
	Badger Island	17.3	1	-	-	60.5	-	-
	Bega Valley	551.9	79	29	1	5.21	7.42	41.21
	Big green Island	16.3	1	-	-	64.21	-	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Boxen Island	12	1	-	-	100.21	-	-
Break O'Day	10.9	1	-	-	58.79	-	-
Cape Barren Island	15.1	1	-	-	58.75	-	-
Chalky Island	16.3	1	-	-	62.21	-	-
Clarke Island	15.1	2	-	-	57.13	-	-
Craggy Island	37	6	-	-	55.5	61.04	-
Curtis Island	34.1	10	-	-	16.29	-	-
East Gippsland	797.2	99	92	15	1.92	3.42	5.29
East Kangaroo Island	24.8	1	-	-	63.75	-	-
Eurobodalla	138.5	13	2	-	19.5	21.96	-
Flinders Island	38.7	4	-	-	44.96	-	-
Gabo Island	340.4	83	34	-	4.67	6.08	-
Glennie Group	54.5	3	1	-	20.54	76.42	-
Hogan Island Group	101.4	25	3	-	14.96	23.08	-
Inner Sister Island	30.3	5	-	-	46	61.25	-
Kanowna Island	83.7	9	3	-	11.5	12.25	-
Kent Island Group	74.7	17	1	-	22.04	36.29	-
Kiama	68.9	3	1	-	26.88	52.42	-
Moncoeur Islands	99.3	19	3	-	14	14.13	-
Montague Island	127.1	24	3	-	16.88	21.88	-
Mount Chappell Island	12	1	-	-	64.83	-	-
Norman Island	15.1	2	-	-	62.38	-	-
Outer Sister Island	24.3	3	-	-	47.04	58.63	-
Pasco Group	14.1	1	-	-	45.21	-	-
Preservation Island	15.1	2	-	-	99.46	-	-
Prime Seal Island	16.1	2	-	-	61.67	-	-
Pyramid Island	28.1	5	-	-	28.79	-	-
Reef Island	15.4	1	-	-	63.08	-	-
Rodondo Island	133.7	16	3	-	11.42	14.29	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)		
		Low	Moderate	High	Low	Moderate	High
Seal Islands	199.8	38	10	-	5.46	5.79	-
Shell Harbour	21.8	2	-	-	56.04	-	-
Shellback Island	11.6	1	-	-	62.75	-	-
Shoal Haven	82.1	9	2	-	18.42	50.71	-
Skull Rock	50.3	10	1	-	11.92	28.54	-
South Gippsland	224.2	23	7	-	8.75	12.46	-
Sutherland Shire	15	2	-	-	37.13	-	-
Wellington	726.3	71	53	1	1.13	1.63	15.63
Bega Valley	551.9	79	29	1	5.21	7.42	41.21
Cape Conran	609	98	66	3	3.08	4.58	10.79
Cape Howe / Mallacoota	346.5	82	30	-	5.67	5.96	59.29
Cape Liptrap	18.8	2	-	-	62.5	-	-
Clonmel Island	472	54	31	1	4	4.46	85.04
Corner Inlet	50.5	12	1	-	12.33	12.46	-
Corringle	417	86	35	1	4.29	4.71	107.5
Croajingolong (east)	446.3	86	30	2	4.42	5.21	20.5
Croajingolong (west)	417.2	92	54	1	3.58	4.83	44.08
Eurobodalla	138.5	13	2	-	19.5	21.96	-
Golden Beach	534	70	51	1	2.33	4.63	15.63
Kiama	68.9	3	1	-	26.88	52.42	-
Lake Tyers Beach	416	72	30	1	4	5	107.04
Lakes Entrance	344.9	61	32	-	4.17	5.92	-
Lakes Entrance (west)	422.3	61	38	1	1.92	5.96	96.25
Marlo	745.9	98	67	2	3	4.17	12.71
McLoughlins Beach	726.3	59	33	1	2.54	2.63	16.17
Ocean Grange	397.7	69	53	-	2.46	3.88	-
Point Hicks	797.2	97	92	15	2.29	3.42	5.29
Seaspray	338.4	71	45	-	1.21	1.92	-
Shell Harbour	21.8	2	-	-	56.04	-	-

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Receptor	Maximum dissolved hydrocarbon exposure	Probability of dissolved hydrocarbon exposure			Minimum time before dissolved hydrocarbon exposure (days)			
		Low	Moderate	High	Low	Moderate	High	
Shoal Haven	82.1	9	2	-	18.42	50.71	-	
Snake Island	142.3	31	11	-	8.83	11.33	-	
Sutherland Shire	15	2	-	-	37.13	-	-	
Sydenham Inlet	644.9	99	63	2	2.79	3.96	17.63	
Waratah Bay	12.3	2	-	-	64.58	-	-	
Wilson's Promontory (east)	224.2	22	7	-	9.38	13.46	-	
Wilson's Promontory (north)	180.9	23	3	-	8.75	14.17	-	
Wilson's Promontory (west)	99.4	9	2	-	11.38	19.92	-	
Woodside Beach	634.9	68	36	1	1.13	1.63	23.5	
New South Wales	630.6	83	32	2	3.96	7.25	41.21	
State Waters	Tasmania	142.5	26	4	-	12.5	22.46	-
	Victoria	841.9	100	92	15	0.71	1	5.29

*The release location resides within the receptor boundaries.

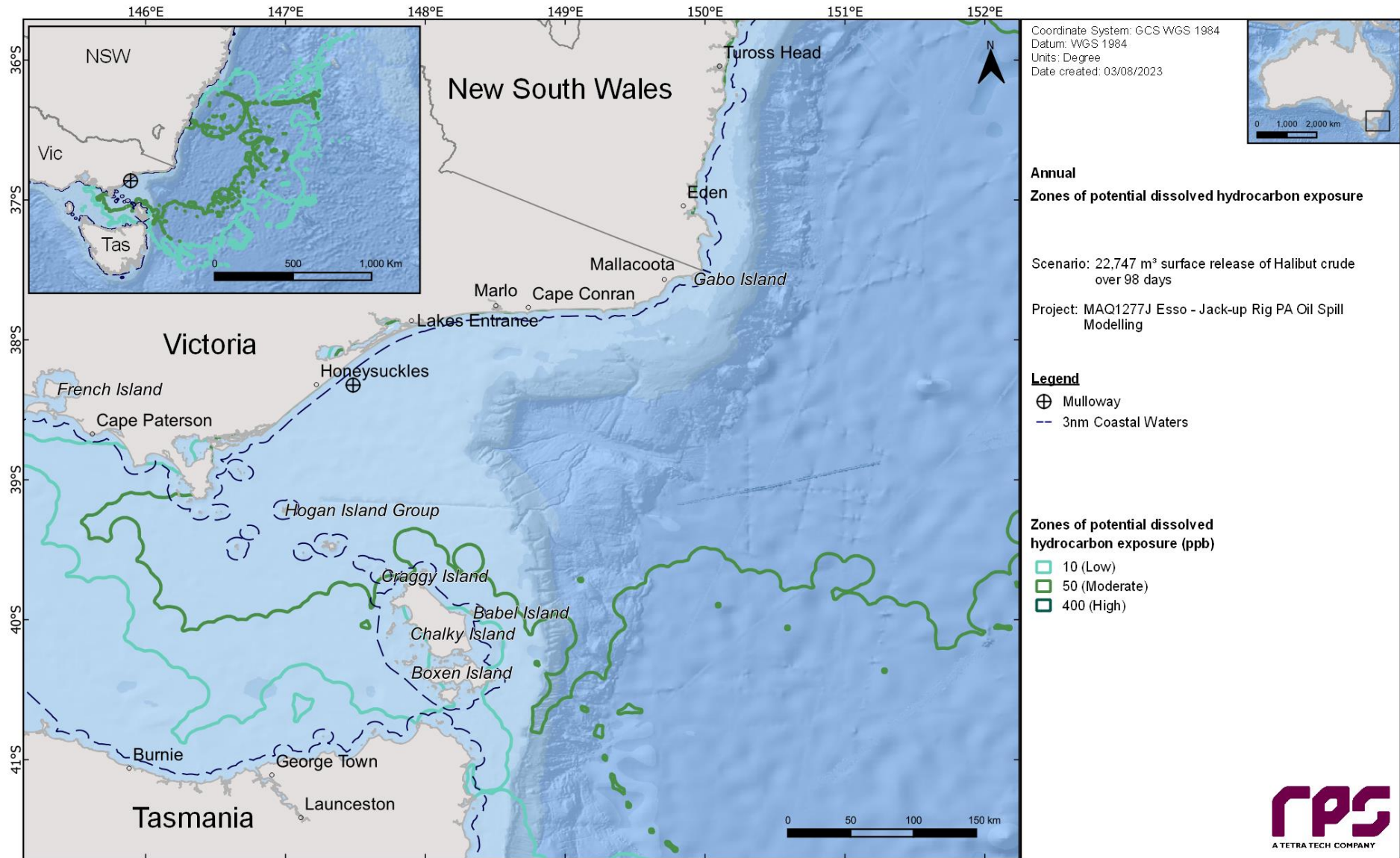


Figure 11-3 Zones of potential dissolved hydrocarbon exposure at 0-10 m below the sea in the event of a 22,747 m³ surface release of Halibut crude at Mullaway over 98 days.

11.1.3.2 Entrained Hydrocarbons

Table 11-7 summarises the maximum distance and direction from the release location to entrained hydrocarbons at the low (≥ 10 ppb) and high (≥ 100 ppb) exposure levels. The maximum distance to the low and high thresholds from the release location was 1,507 km (east-northeast) and 919 km (east-northeast), respectively.

Table 11-8 presents the probability of exposure to individual receptors from entrained hydrocarbons in the 0-10 m depth layer for the annualised assessment.

In the surface (0-10 m) depth layer, a total of 56 BIAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold. Excluding the BIAs that the release location resides within (see Section 9.2.1), the highest probabilities of exposure to the low and high entrained hydrocarbons were predicted for the Antipodean Albatross - Foraging (100% and 96%), Indo-Pacific/Spotted Bottlenose Dolphin - Breeding (95% and 57%), Little Penguin - Foraging (96% and 73%), Wedge-tailed Shearwater - Foraging (96% and 73%), White Shark - Foraging (100% and 93%) and White-faced Storm-petrel - Foraging (100% and 97%) BIAs.

Additionally, 9 AMPs, 14 IBRAs and 10 IMCRAs were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold with probabilities of low exposure ranging between 4–84%, 1–100% and 3–78% (excluding Twofold Shelf IMCRA (100%) which the release location resides within), respectively. The highest probability predicted at any of the AMPs, IBRAs and IMCRAs (excluding Twofold Shelf IMCRA) were predicted for the East Gippsland AMP, East Gippsland Lowlands IBRA and Flinders IMCRA.

Eight KEFs were predicted to be exposed to entrained hydrocarbons at, or above the low threshold with probabilities ranging between 2–100%. Furthermore, 2 Ramsar areas (62–66%), 8 RSBs (4–99%), 54 LGA nearshore waters (1–100%) and 40 Sub-LGA nearshore waters (1–100%) were predicted to be exposed to entrained hydrocarbons at, or above, the low threshold.

Figure 11-5 illustrate the zones of potential entrained hydrocarbon exposure for the 0-10 m depth.

Table 11-7 Maximum distance and direction from the release location to entrained hydrocarbon exposure thresholds in the 0 – 10 m depth layer. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Distance and direction travelled	Zones of potential entrained hydrocarbon exposure	
	Low	High
Maximum distance (km) from the release location	1,507	919
Maximum distance (km) from release location (99 th percentile)	1,120	762
Direction	East-northeast	East-northeast

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Table 11-8 Probability of entrained hydrocarbons exposure to marine based receptors in the 0–10 m depth layer. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Receptor		Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
			Low	High	Low	High
AMP	Beagle	172.2	48	15	7.13	12.63
	Boags	18.3	4	-	29.83	-
	Central Eastern	30.9	4	-	28.29	-
	East Gippsland	216	84	20	8.46	12
	Flinders	116.4	45	1	17.71	38.13
	Freycinet	38.1	10	-	22.46	-
	Hunter	11.5	1	-	67.58	-
	Jervis	202.7	24	2	18.71	47.29
	Lord Howe	21	6	-	33.75	-
BIA	Antipodean Albatross - Foraging	657.4	100	96	1.42	1.42
	Australasian Gannet - Foraging	16.6	3	-	31.29	-
	Black Noddy - Foraging	15.7	2	-	73.21	-
	Black Petrel - Foraging	330.2	64	15	5.71	10.79
	Black-browed Albatross - Foraging*	1,273.10	100	100	0.04	0.04
	Black-faced Cormorant - Foraging	50.1	11	-	40.83	-
	Black-winged Petrel - Foraging	17.5	2	-	72.21	-
	Bullers Albatross - Foraging*	1,273.10	100	100	0.04	0.04
	Campbell Albatross - Foraging*	1,273.10	100	100	0.04	0.04
	Common Diving-petrel - Foraging*	1,273.10	100	100	0.04	0.04
	Common Noddy - Foraging	18.6	2	-	72	-
	Crested Tern - Breeding	170.2	50	5	10.54	33.29
	Crested Tern - Foraging	314.4	60	12	6.83	15.04
	Flesh-footed Shearwater - Foraging	330.2	64	15	5.71	10.79
	Great-winged Petrel - Foraging	283.2	64	12	5.75	10.79
	Grey Nurse Shark - Foraging	457.7	92	55	3.46	6.5
	Grey Nurse Shark - Migration	657.4	92	62	2.63	5.54

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Grey Ternlet - Foraging	18.6	2	-	72.04	-
Humpback Whale - Foraging	657.4	95	64	2.42	5.13
Humpback Whale - Migration	92.3	7	-	27.46	-
Indian Yellow-nosed Albatross - Foraging*	1,273.10	100	100	0.04	0.04
Indo-Pacific/Spotted Bottlenose Dolphin - Breeding	374.5	95	57	3.5	7.17
Indo-Pacific/Spotted Bottlenose Dolphin - Foraging	10.3	1	-	104.79	-
Kermadec Petrel - Foraging	17.5	2	-	72.17	-
Little Penguin - Breeding	177.3	53	12	10.25	15.21
Little Penguin - Foraging	379.9	96	73	2.25	5.5
Little Shearwater - Foraging	18.6	2	-	72.04	-
Masked Booby - Foraging	18.6	2	-	72.04	-
Northern Giant Petrel - Foraging	283.2	64	12	5.75	11.08
Providence Petrel - Foraging	18.6	2	-	72.04	-
Pygmy Blue Whale - Distribution*	1,273.10	100	100	0.04	0.04
Pygmy Blue Whale - Foraging*	1,273.10	100	100	0.04	0.04
Red-tailed Tropicbird - Foraging	18.6	2	-	72.04	-
Short-tailed Shearwater - Breeding	61.1	41	-	8.38	-
Short-tailed Shearwater - Foraging*	1,273.10	100	100	0.04	0.04
Shy Albatross - Breeding	10.7	1	-	77.75	-
Shy Albatross - Foraging*	1,273.10	100	100	0.04	0.04
Soft-plumaged Petrel - Foraging	13.3	1	-	59.21	-
Sooty Shearwater - Foraging	512.3	90	48	2.88	6.25
Sooty Tern - Foraging	17.5	2	-	72.13	-
Southern Giant Petrel - Foraging	283.2	64	12	5.75	11.08
Southern Right Whale - Breeding	11.2	1	-	58.25	-
Southern Right Whale - Connecting Habitat	89.1	16	-	34.54	-
Southern Right Whale - Migration*	1,273.10	100	100	0.04	0.04
Wandering Albatross - Foraging*	1,273.10	100	100	0.04	0.04
Wedge-tailed Shearwater - Foraging	657.4	96	73	2.21	4.83

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
White Shark - Breeding*	1,273.10	100	100	0.04	0.04
White Shark - Distribution*	1,273.10	100	100	0.04	0.04
White Shark - Foraging	1,065.40	100	93	1.71	1.79
White Tern - Foraging	17.5	2	-	72.42	-
White-bellied Storm Petrel - Foraging	17.5	2	-	72.13	-
White-capped Albatross - Foraging	283.2	64	12	5.75	11.08
White-faced Storm-petrel - Breeding	492.2	79	27	4.17	7.17
White-faced Storm-petrel - Foraging	1,065.40	100	97	1.38	1.42
White-fronted Tern - Foraging	34.1	9	-	47.33	-
Wilson's Storm Petrel - Migration	283.2	64	12	5.75	11.08
Bateman	170.2	48	3	12.58	56.25
East Gippsland Lowlands	1,065.40	100	91	2.29	4.29
Flinders	159.7	40	8	14.58	29.04
Gippsland Plain	726.2	86	66	1	1.54
Illawarra	142.2	9	2	28.46	51.79
Jervis	174.7	20	2	17.88	50.67
King Island	12	2	-	40.29	-
Pittwater	27.5	5	-	59.96	-
South East Coastal Ranges	219.5	47	3	10.04	45.67
Strzelecki Ranges	34.4	4	-	49.54	-
Sydney Cataract	23.1	5	-	30	-
Tasmanian South East	17.8	1	-	53.96	-
Wilson's Promontory	188.9	53	7	5.04	5.92
Wyong	11.8	1	-	94.21	-
Batemans Shelf	484.4	77	27	4.29	7.21
Boags	22.9	3	-	38.29	-
Central Bass Strait	82.7	27	-	12.21	-
Central Victoria	47.2	8	-	30.79	-
Flinders	637.7	78	49	2.13	3.96

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)		
		Low	High	Low	High	
	Freycinet	42.3	13	-	22.71	-
	Hawkesbury Shelf	102.6	12	1	29	74.79
	Otway	17	3	-	31.29	-
	Twofold Shelf*	1,273.10	100	100	0.04	0.04
	Victorian Embayments	469	62	31	3.96	6
KEF	Big Horseshoe Canyon	359.7	88	20	7.83	18.42
	Canyons on the eastern continental slope	283.2	61	10	5.75	11.08
	Lord Howe seamount chain	13.1	2	-	72.33	-
	Seamounts South and east of Tasmania	25.4	9	-	25.38	-
	Shelf rocky reefs	169.7	54	10	7.25	15.13
	Tasman Front and eddy field	153.5	13	4	11.83	26.38
	Tasmantid seamount chain	30.9	3	-	48.33	-
	Upwelling East of Eden	1,065.40	100	100	0.75	0.79
MNP	Bunurong	21	4	-	50.13	-
	Cape Howe	325.8	96	57	3.33	6.96
	Corner Inlet	41.4	21	-	11.46	-
	Ninety Mile Beach	648.2	93	79	0.63	1.04
	Point Hicks	1,065.40	100	93	2.17	4.21
	Wilson's Promontory	86	36	-	9.83	-
MP	Batemans	177.8	50	5	10.54	30.08
	Jervis Bay	95.3	11	-	27.71	-
MS	Beware Reef	526.3	99	77	2.5	5.29
NP	Kent Group	137.5	31	5	15.75	36.5
Ramsar	Corner Inlet	469	62	31	3.96	6
	Gippsland Lakes	479	66	35	3.54	6.08
RSB	Beware Reef	536.8	99	77	2.5	4.67
	Cody Bank	29.2	4	-	43.29	-
	Cutter Rock	48.4	33	-	15.75	-
	Endeavour Reef	54.8	24	-	26.33	-

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
New Zealand Star Bank	408.4	97	79	2	4.92
Wakitipu Rock	65.3	23	-	24.13	-
Warrego Rock	60.2	23	-	28.88	-
Wright Rock	70.2	24	-	25.21	-
Anser Island	49.8	18	-	11.33	-
Babel Island	30.4	14	-	48.17	-
Badger Island	30.3	7	-	59.25	-
Bass Coast	15	4	-	50.67	-
Bega Valley	355.2	94	43	5.04	7.21
Big green Island	17.4	7	-	63.13	-
Boxen Island	31.8	6	-	59.75	-
Break O'Day	17.8	1	-	53.96	-
Cape Barren Island	27.1	9	-	47.46	-
Central Coast	11.8	1	-	94.79	-
Chalky Island	21.7	4	-	61.58	-
Clarke Island	23.1	2	-	57.58	-
Craggy Island	73	23	-	33.5	-
Curtis Island	72.3	28	-	15.79	-
Dorset	11.6	1	-	115.83	-
East Gippsland	1,065.40	100	91	1.75	4.29
East Kangaroo Island	21.6	5	-	62	-
Eurobodalla	128.1	37	3	17.38	57.5
Flinders Island	85	13	-	34.92	-
Gabo Island	289.2	93	50	4.54	6.92
Glennie Group	43.8	9	-	13.04	-
Goose Island	25.7	6	-	59.63	-
Hogan Island Group	159.7	40	8	14.63	29.04
Inner Sister Island	82.9	15	-	34.58	-
Kanowna Island	60.1	18	-	11.33	-

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Kent Island Group	125.2	30	5	21.75	36.5
Kiama	142.2	6	2	28.67	51.79
Lake Macquarie	10.6	1	-	94.21	-
Martins Island	12.3	3	-	36.08	-
Moncoeur Islands	104.3	34	1	13.71	68.33
Montague Island	170.2	48	3	12.58	56.25
Mount Chappell Island	21.9	6	-	61.67	-
Norman Island	49.5	6	-	49.54	-
Northern Beaches	11.4	2	-	60.96	-
Outer Sister Island	65.6	18	-	34.63	-
Pasco Group	44	11	-	45.21	-
Preservation Island	22.4	2	-	92.33	-
Prime Seal Island	40.9	11	-	57.13	-
Pyramid Island	81	24	-	23.54	-
Randwick	27.5	5	-	60	-
Reef Island	22.7	6	-	61.71	-
Rodondo Island	89.1	29	-	10.92	-
Seal Islands	166.7	53	7	5.04	5.92
Shell Harbour	103.3	6	1	29	74.29
Shellback Island	46.6	6	-	50.54	-
Shoal Haven	174.7	20	2	17.88	50.67
Skull Rock	50.6	17	-	11.38	-
South Gippsland	188.9	44	5	5.54	20.63
Sutherland Shire	24.1	5	-	59.88	-
Vansittart Island	13.6	1	-	61.96	-
Waverly	21.2	3	-	60.38	-
Wellington	726.2	86	66	1	1.54
Wollongong	54.8	9	-	29.21	-
Woollahra	13.8	3	-	60.75	-

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)		
		Low	High	Low	High	
Nearshore Waters (sub-LGA)	Bega Valley	355.2	94	43	5.04	7.21
	Cape Conran	544.3	99	80	3.08	5.04
	Cape Howe / Mallacoota	268.4	94	43	5.21	6.13
	Cape Liptrap	47.2	4	-	49.54	-
	Central Coast	11.8	1	-	94.79	-
	Clonmel Island	434.3	67	37	3.92	5.5
	Corner Inlet	61.1	41	-	8.38	-
	Corringle	433	99	58	4	6.21
	Croajingolong (east)	217.6	93	31	4.13	7.88
	Croajingolong (west)	324.5	96	65	2.5	5
	Eurobodalla	128.1	37	3	17.38	57.5
	Golden Beach	702.6	82	59	2.21	3.54
	Kiama	142.2	6	2	28.67	51.79
	Kilcunda	10.8	1	-	102.25	-
	Lake Macquarie	10.6	1	-	94.21	-
	Lake Tyers Beach	410.5	88	45	3.38	6.5
	Lakes Entrance	445.4	83	40	3.42	5.75
	Lakes Entrance (west)	622.4	79	47	1.75	5.71
	Marlo	528	99	77	2.96	4.88
	McLoughlins Beach	726.2	74	40	2.13	3.08
	Northern Beaches	11.4	2	-	60.96	-
	Ocean Grange	552.5	81	61	2	2.79
	Point Hicks	1,065.40	100	91	2.29	4.29
	Port Welshpool	31.6	17	-	11.46	-
	Randwick	27.5	5	-	60	-
	Seaspray	634.4	86	66	1	1.54
	Shell Harbour	103.3	6	1	29	74.29
	Shoal Haven	174.7	20	2	17.88	50.67
Snake Island	138.4	54	4	5.5	20.21	

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Receptor	Maximum entrained hydrocarbon exposure	Probability of entrained hydrocarbon exposure		Minimum time before entrained hydrocarbon exposure (days)	
		Low	High	Low	High
Sutherland Shire	24.1	5	-	59.88	-
Sydenham Inlet	724.7	100	78	2.79	7.46
Venus Bay	23.3	4	-	50.67	-
Waratah Bay	34.8	4	-	49.54	-
Waverly	21.2	3	-	60.38	-
Wilson's Promontory (east)	188.9	40	5	8.79	20.63
Wilson's Promontory (north)	155.9	44	5	5.54	29.08
Wilson's Promontory (west)	60.7	23	-	10.96	-
Wollongong	54.8	9	-	29.21	-
Woodside Beach	635.9	86	59	1	1.63
Woollahra	13.8	3	-	60.75	-
New South Wales	374.5	95	55	3.75	7.17
State Waters					
Tasmania	171.4	43	9	12.42	24.63
Victoria	1,065.40	100	93	0.54	0.83

*The release location resides within the receptor boundaries.

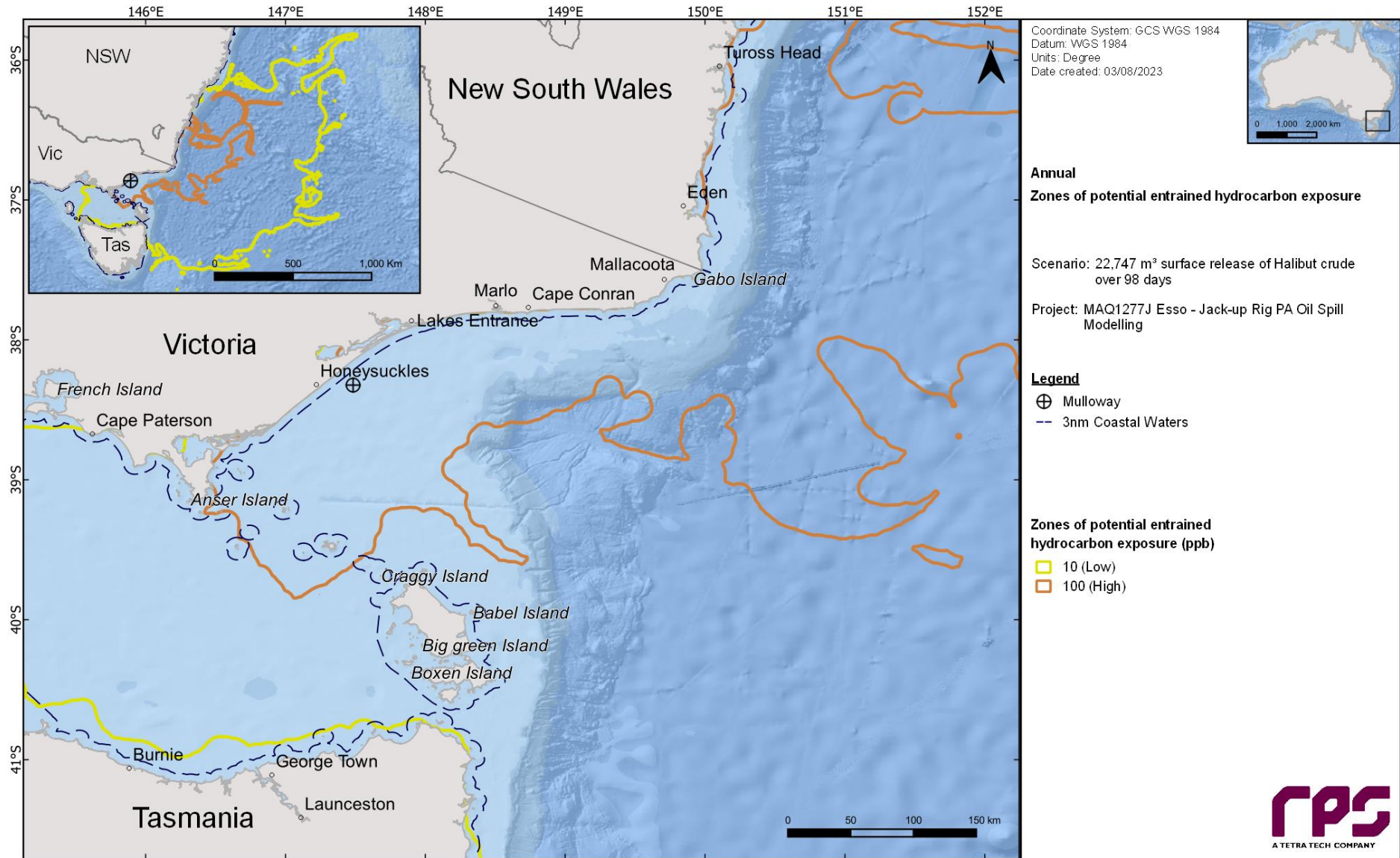


Figure 11-4 Zones of potential entrained hydrocarbon exposure at 0-10 m below the sea surface in the event of a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.2 Deterministic Analysis

The stochastic modelling results were assessed, and the “worst case” deterministic runs were identified and are presented below. The deterministic analysis assessed the largest swept area of floating oil above 10 g/m² (see Section 11.2.1), the minimum time before shoreline accumulation above 10 g/m² (see Section 11.2.2), the largest volume of oil ashore (see Section 11.2.3), the longest length of shoreline accumulation above 100 g/m² (see Section 11.2.4), the largest area of entrained hydrocarbons above 100 ppb (see Section 11.2.5), and the largest area of dissolved hydrocarbons above 50 ppb (see Section 11.2.6).

Table 11-9 presents a summary of all deterministic analysis criteria and the corresponding floating oil, shoreline accumulation, entrained and dissolved hydrocarbon values at the assessed thresholds.

Note, receptor-based statistical analysis of the worst-case simulations outlined in Table 10-9 are provided as Excel spreadsheets.

Interpretation of the deterministic analysis result table and timeseries plots:

The summary deterministic analysis results presented in the table below should be interpreted as **peak values**, representing the total volume accumulated on the shoreline or swept area exposed by floating or in-water hydrocarbons throughout the entire simulation duration. It should be noted that these peak values do consider the weathering processes that the oil undergo over time. As an example, the first simulation (run 02) showed that a maximum of 151 km² was exposed to floating oil above the moderate threshold over a period of 118 days.

It is also important to note that the timeseries plots present values at specific points in time. For example, when considering shoreline volume, the value reported in the timeseries plot does not account for oil that may have already reached the shore but was subsequently lost through evaporation or other weathering processes.

Continuing with the previous example, the timeseries plot indicates that the peak floating oil swept area above the moderate threshold reached 7 km². This value represents the highest swept area recorded at a single point in time during the simulation.

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Table 11-9 Summary of the deterministic analysis. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Variable	Threshold	Deterministic Analysis Criteria					
		Largest swept area of floating oil above 10 g/m ²	Minimum time before shoreline accumulation above 10 g/m ²	Largest volume of oil ashore	Longest length of shoreline accumulation above 100 g/m ²	Largest area of entrained hydrocarbons above 100 ppb	Largest area of dissolved hydrocarbons above 50 ppb
Run Number		2	6	82	3	17	9
Total area of floating Oil exposure (km ²)	1 g/m ²	1,327	2,416	1,700	1,640	2,209	2,382
	10 g/m ²	151	118	70	80	108	75
	50 g/m ²	-	-	-	-	-	-
Total length of shoreline accumulation (km)	10 g/m ²	34	232	297	274	196	69
	100 g/m ²	5	54	95	120	51	4
	1,000 g/m ²	2	6	24	5	2	0
Minimum time before accumulation on any shoreline (days)	10 g/m ²	32.71	1.83	3.08	5.29	4.75	24.42
	100 g/m ²	40.75	2.17	8.08	6.00	14.50	30.92
	1,000 g/m ²	104.42	11.58	13.92	100.17	26.17	-
Peak volume of oil ashore (m ³)		50	336	869	530	210	24
Total area of entrained hydrocarbon exposure (km ²)	10 ppb	207,880	172,551	26,625	32,253	208,148	218,285
	100 ppb	16,636	27,649	7,743	5,831	32,178	17,574
Total area of dissolved hydrocarbon exposure (km ²)	10 ppb	34,416	28,629	8,942	8,205	38,027	41,098
	50 ppb	8,180	4,624	4,283	3,674	5,943	9,207
	400 ppb	7	-	-	5	1	4
Start Date		6 th July 2013	27 th February 2013	21 st November 2014	30 th November 2012	26 th March 2015	2 nd June 2016

11.2.1 Deterministic Case: Largest swept area of floating oil above 10 g/m²

The deterministic trajectory that resulted in the largest swept area of floating oil above 10 g/m² was identified as run number 2, which started on the 6th of July 2013. Figure 11-5 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 2.

Figure 11-6 displays the time series of the swept area of low (1 g/m²), moderate (10 g/m²) and high (50 g/m²) floating oil over the 118-day simulation.

Figure 11-7 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11-10 summarises the mass balance at the peak and at end of the simulation.

Table 11-10 Summary of the mass balance for the trajectory that resulted in the largest swept area of floating oil above 10 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	654	6.75	7
Entrained (m ³)	4,631	96.25	3,079
Dissolved (m ³)	206	45.13	12
Evaporation (m ³)	10,763	118.00	10,763
Decay (m ³)	8,872	118.00	8,872
Ashore (m ³)	50	117.63	50

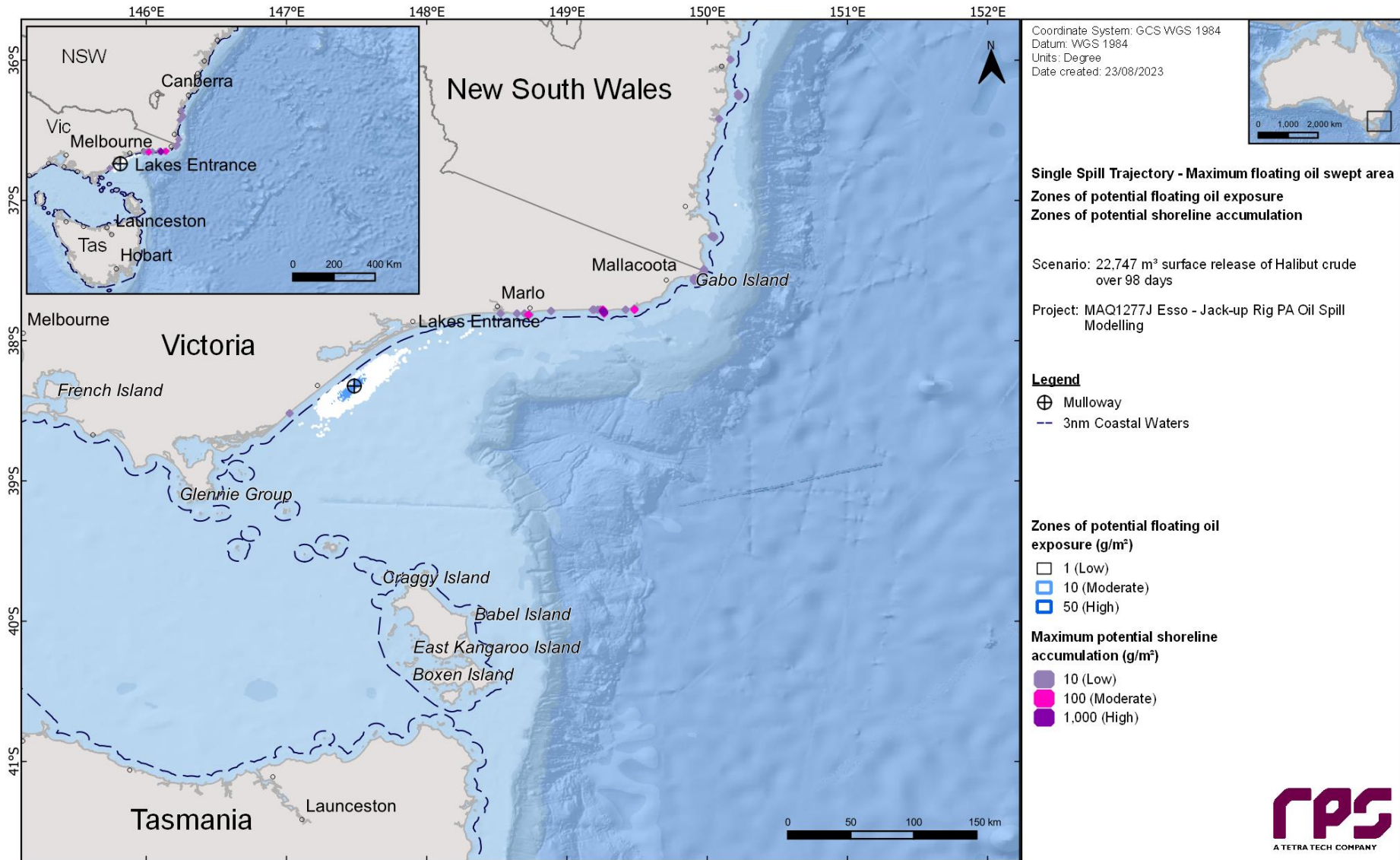


Figure 11-5 Zones of potential floating oil exposure over the 118-day simulation for the trajectory with the largest swept area of floating oil above 10 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

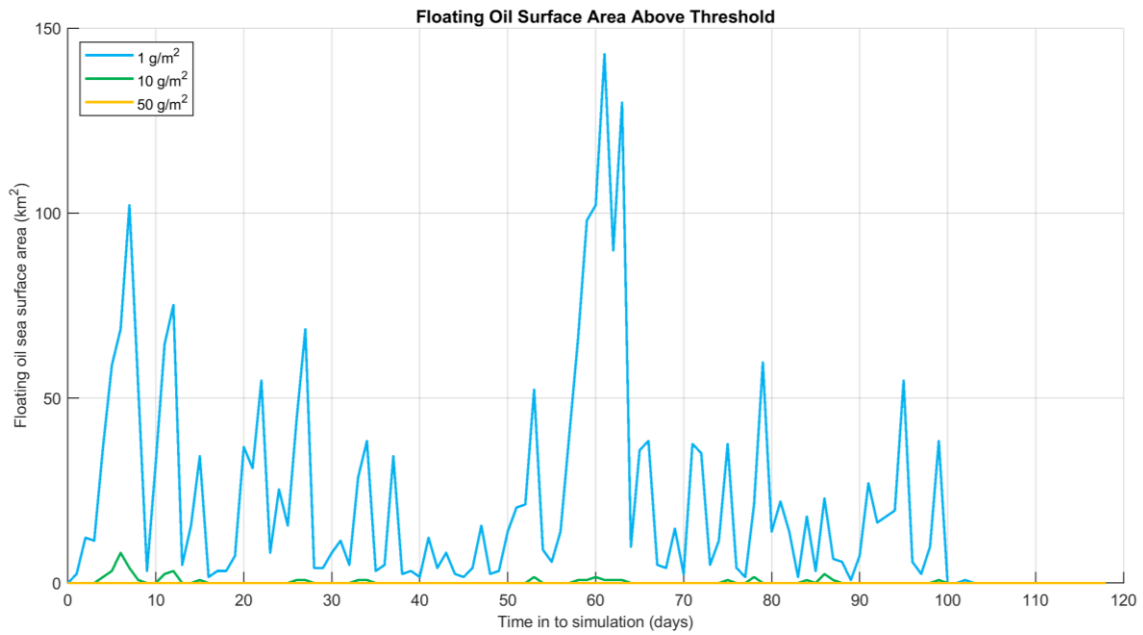


Figure 11-6 Time series of the area of floating oil for the trajectory with the largest swept area of floating oil above 10 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

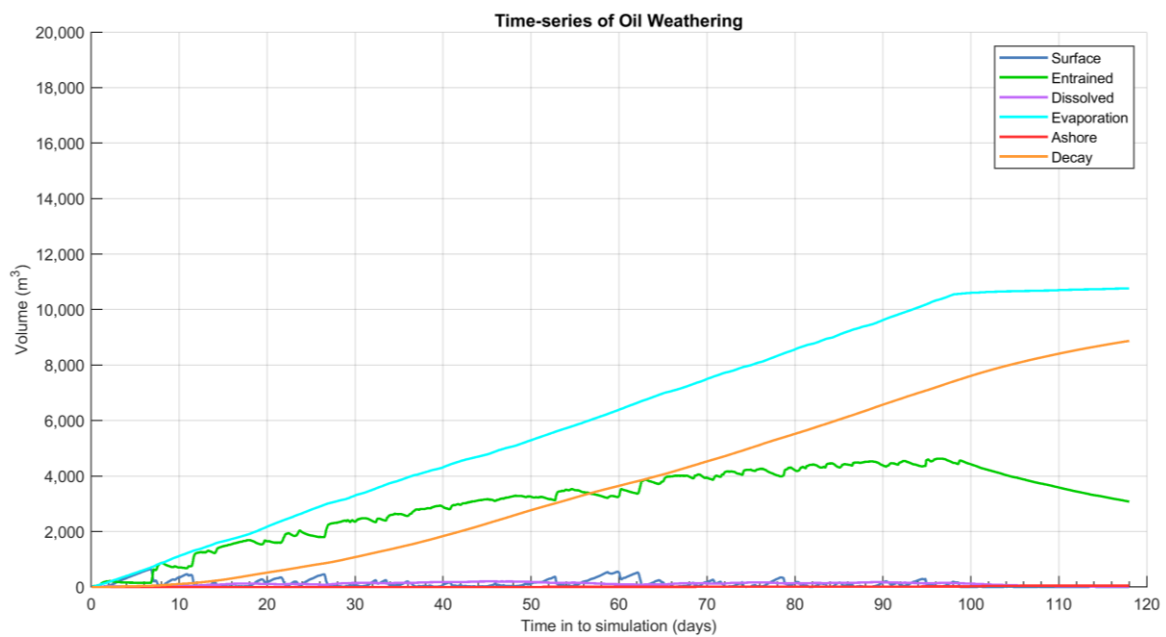


Figure 11-7 Predicted weathering and fates graph for the trajectory with the largest swept area of floating oil above 1 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.2.2 Deterministic Case: Minimum time before shoreline accumulation above 10 g/m²

The deterministic trajectory that resulted in the minimum time before shoreline accumulation above the low threshold (10 g/m²) was identified during as run number 6 which started on the 27th of February 2013. Figure 11.8 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 6.

Figure 11-9 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11.11 summarises the mass balance at the end of the 118-day simulation.

Table 11.11 Summary of the mass balance for the trajectory that resulted in the minimum time before shoreline accumulation above the low threshold (10 g/m²). Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	763	42.25	3
Entrained (m ³)	4,627	95.92	3,170
Dissolved (m ³)	158	88.58	34
Evaporation (m ³)	11,319	118.00	11,319
Decay (m ³)	7,831	118.00	7,831
Ashore (m ³)	351	85.67	336

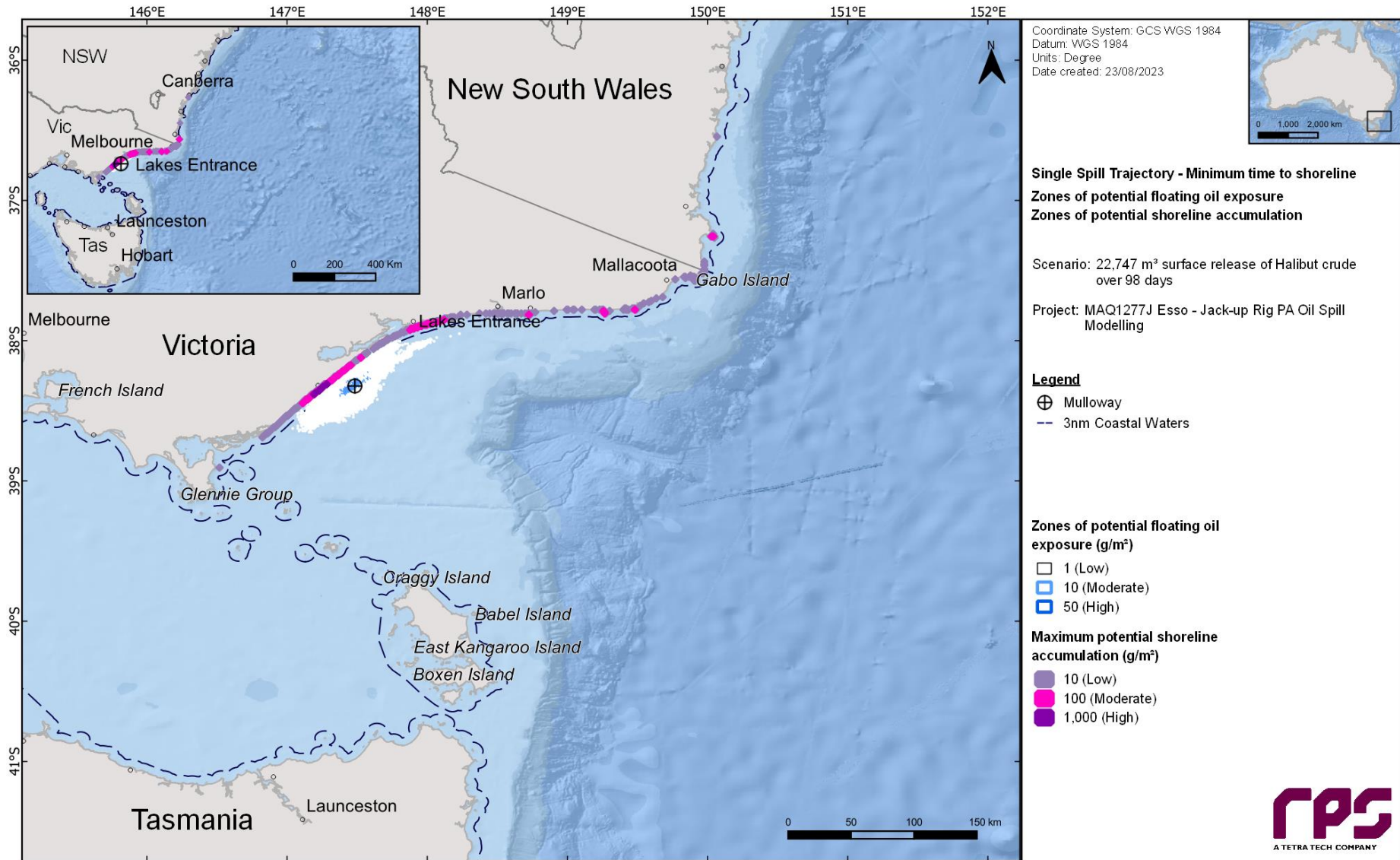


Figure 11.8 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the minimum time before shoreline accumulation above 10 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

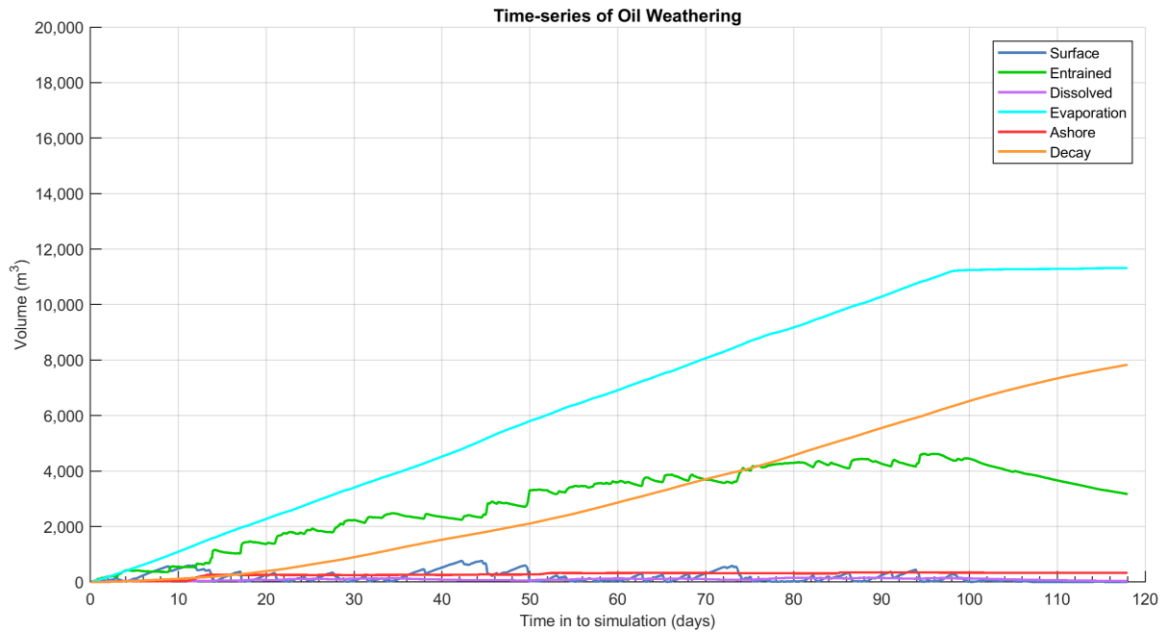


Figure 11-9 Predicted weathering and fates graph for the trajectory with the minimum time before shoreline accumulation above 10 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Malloway over 98 days, tracked for 118 days.

11.2.3 Deterministic Case: Largest volume of oil ashore

The deterministic trajectory that resulted in the largest volume of oil ashore was as run number 82 which started on the 21st of November 2014. Figure 11-10 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 82.

Figure 11-11 displays the time series of the volume of oil accumulating on shorelines at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds over the 118-day simulation.

Figure 11-12 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11-12 summarises the mass balance at the end of the simulation.

Table 11-12 Summary of the mass balance at day 98, for the trajectory that resulted in the largest volume of oil ashore. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	451	91.92	0
Entrained (m ³)	4,555	97.17	3,270
Dissolved (m ³)	153	58.38	23
Evaporation (m ³)	10,885	118.00	10,885
Decay (m ³)	7,679	118.00	7,679
Ashore (m ³)	869	93.50	869

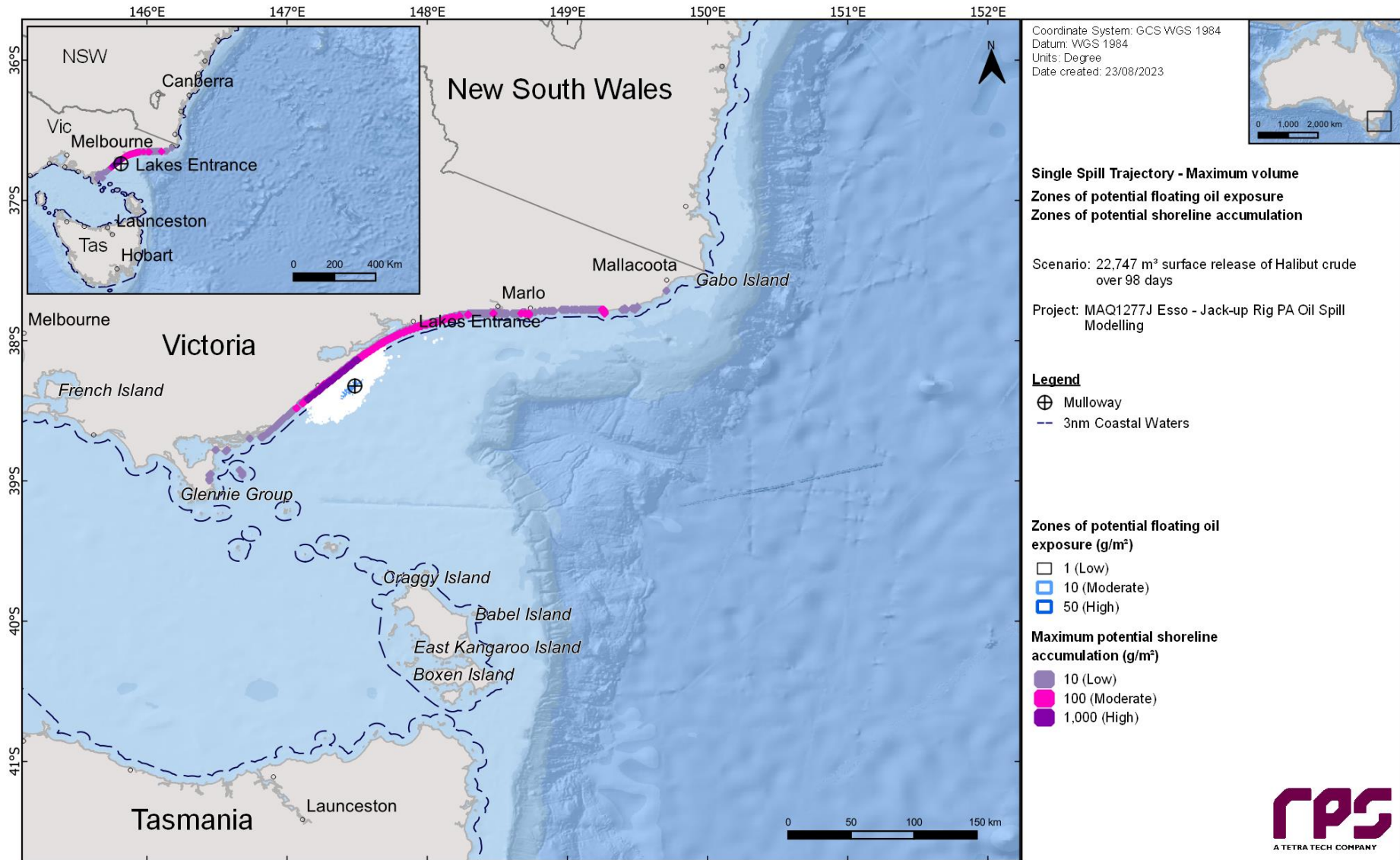


Figure 11-10 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the largest volume of oil ashore. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

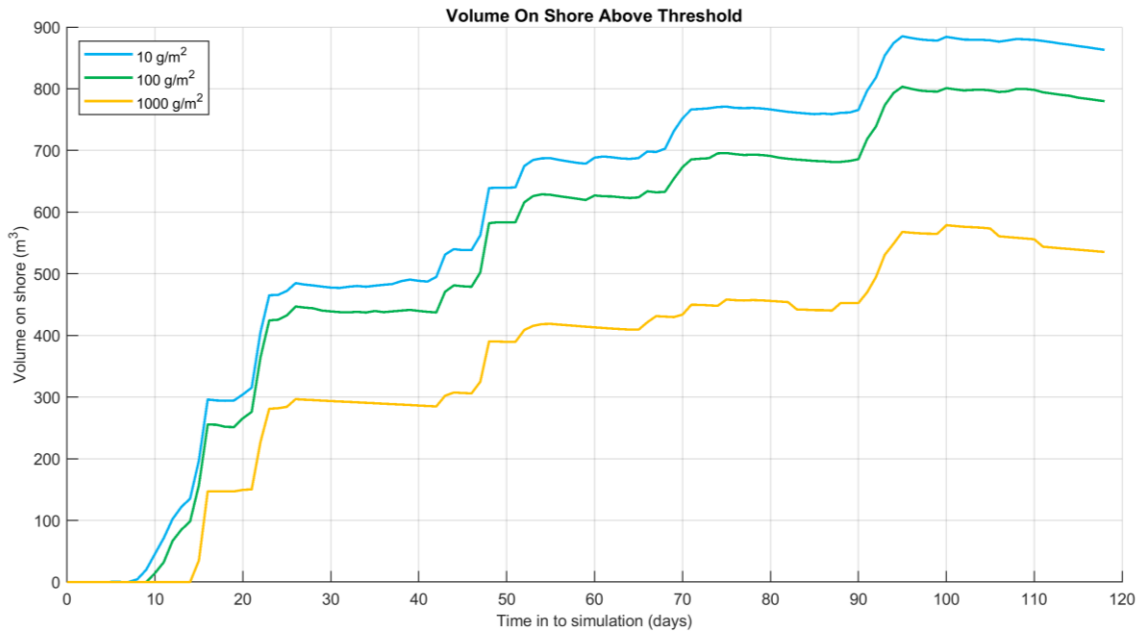


Figure 11-11 Time series of the volume of oil accumulating on shorelines at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds for the trajectory with the largest volume of oil ashore. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

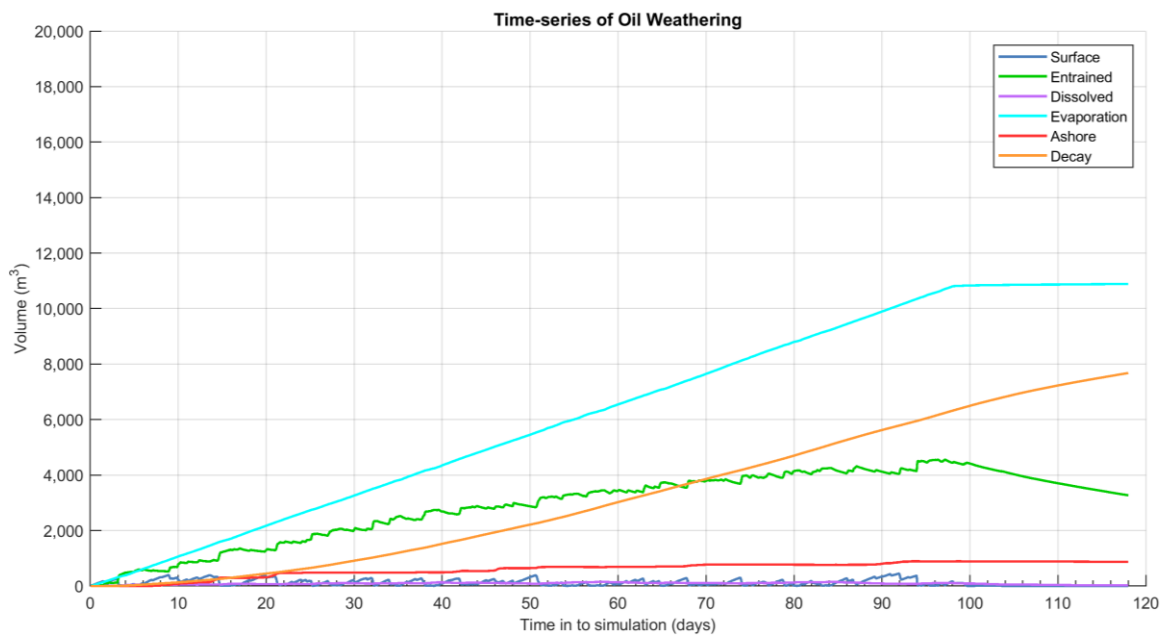


Figure 11-12 Predicted weathering and fates graph for the trajectory with the largest volume of oil ashore. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days, tracked for 118 days.

11.2.4 Deterministic Case: Longest length of shoreline accumulation above 100 g/m²

The deterministic trajectory that resulted in the longest length of shoreline accumulation above 100 g/m² was identified as run number 3 which started on the 30th of November 2012. Figure 11-13 illustrates the floating oil exposure and shoreline contact over the 118 days predicted for run number 3.

Figure 11-14 displays the time series of the length of oil accumulation on shorelines at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds over the 118-day simulation.

Figure 11-15 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11-13 summarises the mass balance at the end of the simulation.

Table 11-13 Summary of the mass balance at day 98, for the trajectory that resulted in the longest length of shoreline accumulation above 100 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	563	97.54	0
Entrained (m ³)	4,689	92.83	3,308
Dissolved (m ³)	141	84.71	19
Evaporation (m ³)	10,890	118.00	10,890
Decay (m ³)	7,978	118.00	7,978
Ashore (m ³)	561	102.04	530

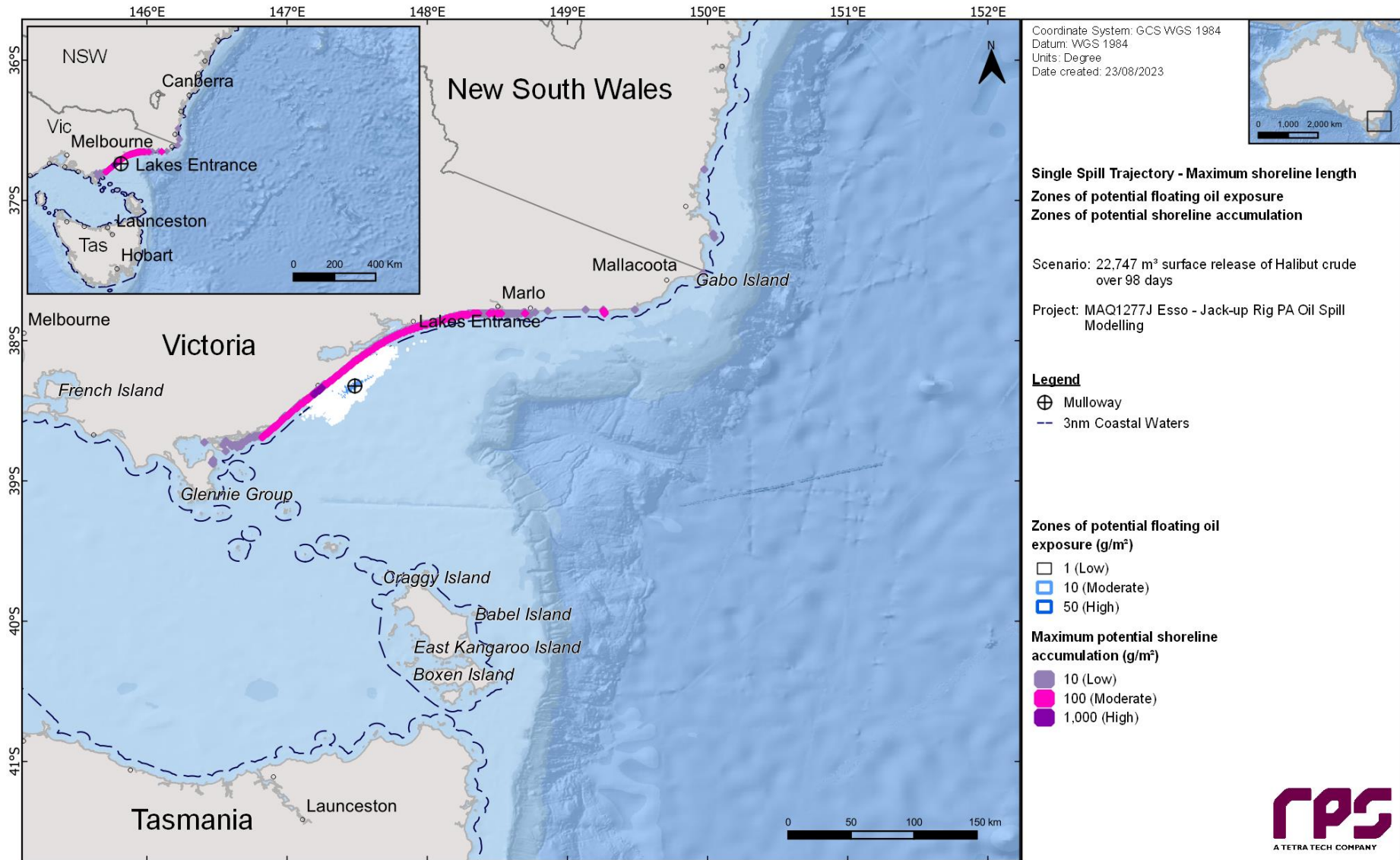


Figure 11-13 Zones of potential floating oil exposure and shoreline accumulation, for the trajectory with the longest length of shoreline accumulation above 100 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

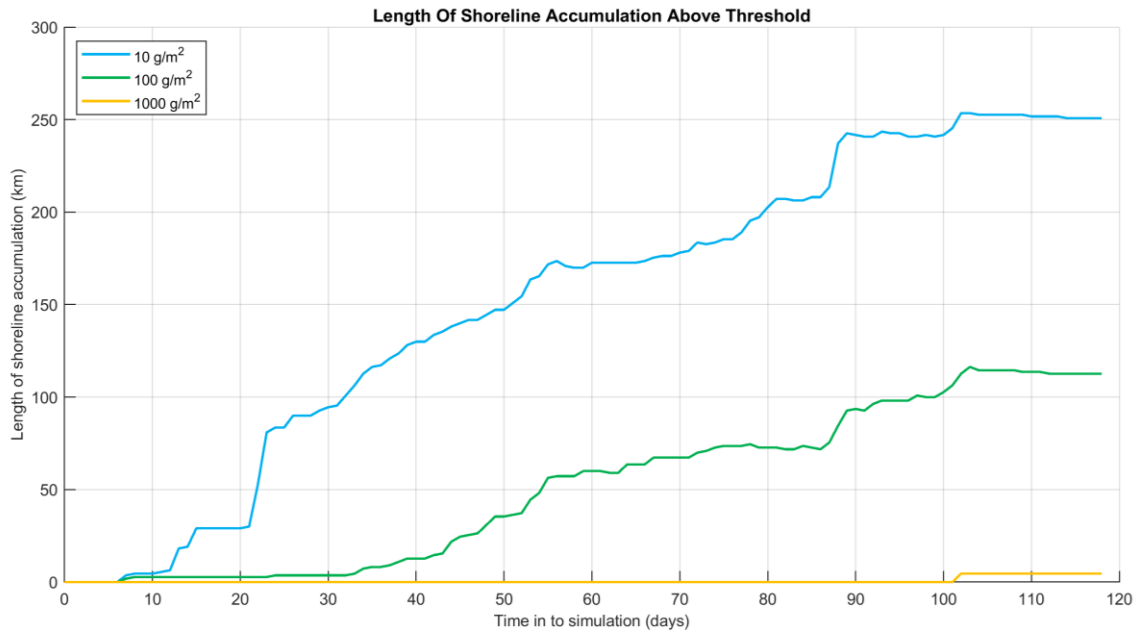


Figure 11-14 Time series of the length of shoreline at the low (10 g/m²), moderate (100 g/m²) and high (1,000 g/m²) thresholds for the trajectory with the longest length of shoreline accumulation above 100 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

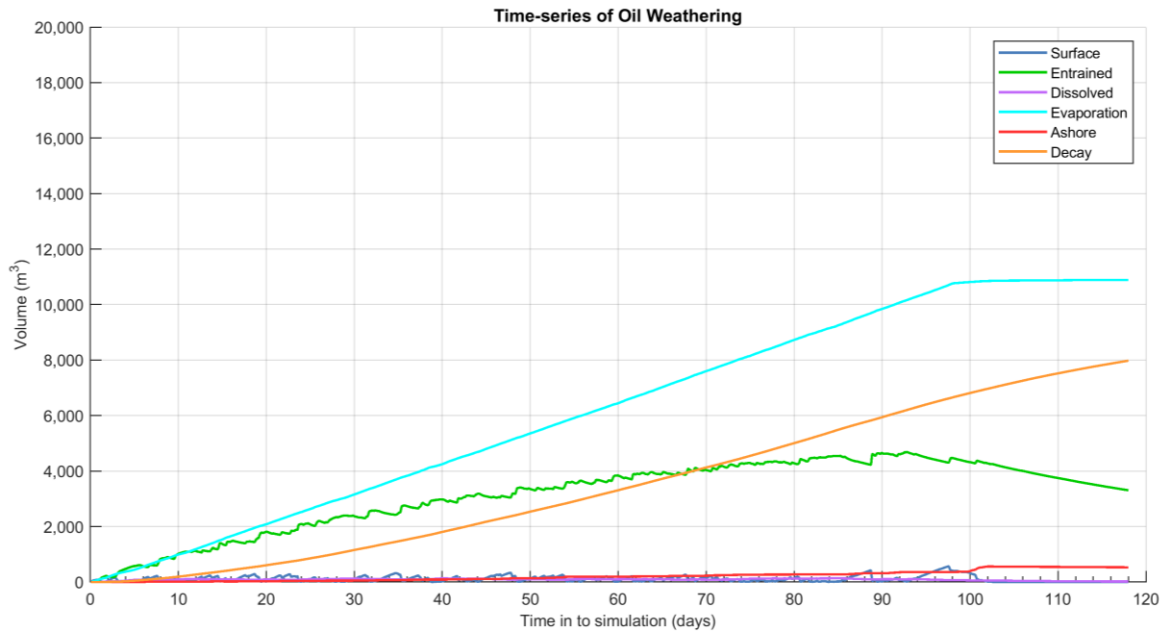


Figure 11-15 Predicted weathering and fates graph for the trajectory with the longest length of shoreline accumulation above 100 g/m². Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.2.5 Deterministic Case: Largest area of entrained hydrocarbons above 100 ppb

The deterministic trajectory that resulted in the largest area of entrained hydrocarbons above 100 ppb (high threshold) was identified as run number 17, which started on the 26th of March 2015. Figure 11-16 illustrates the zones of potential entrained hydrocarbon exposure over the 118 days predicted for run number 17.

Figure 11-17 displays the time series of the area of entrained hydrocarbons at the low (10 ppb) and moderate (100 ppb) thresholds over the 118-day simulation.

Figure 11-18 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11-14 summarises the mass balance at the peak and at end of the simulation.

Table 11-14 Summary of the mass balance for the trajectory that resulted in the largest area of entrained hydrocarbons above 100 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	648	38.67	9
Entrained (m ³)	4,696	97.54	3,252
Dissolved (m ³)	177	48.71	23
Evaporation (m ³)	10,899	118.00	10,899
Decay (m ³)	8,279	118.00	8,279
Ashore (m ³)	248	28.88	210

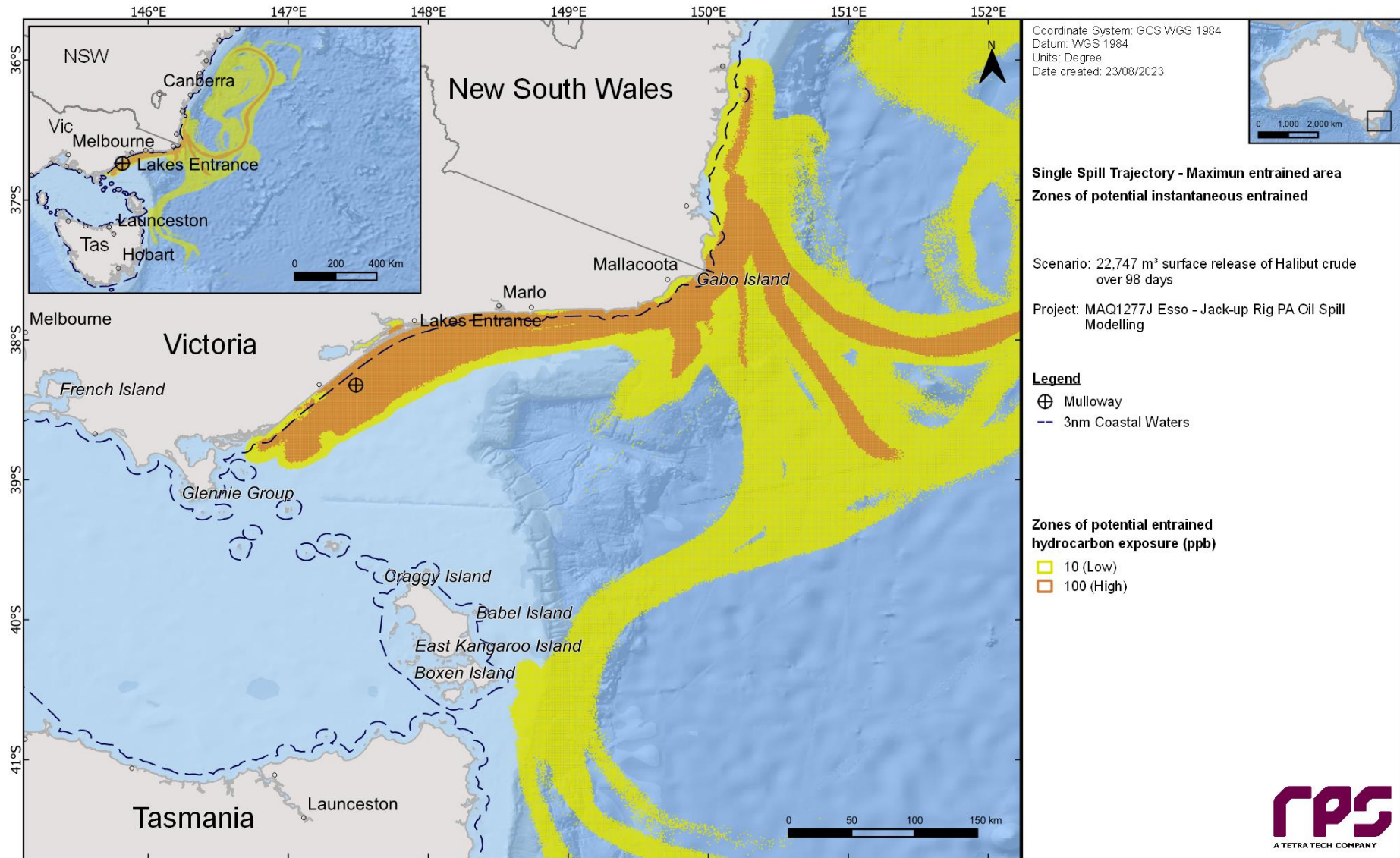


Figure 11-16 Zones of potential entrained hydrocarbon exposure, for the trajectory with the largest area of entrained hydrocarbons above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days, tracked for 118 days.

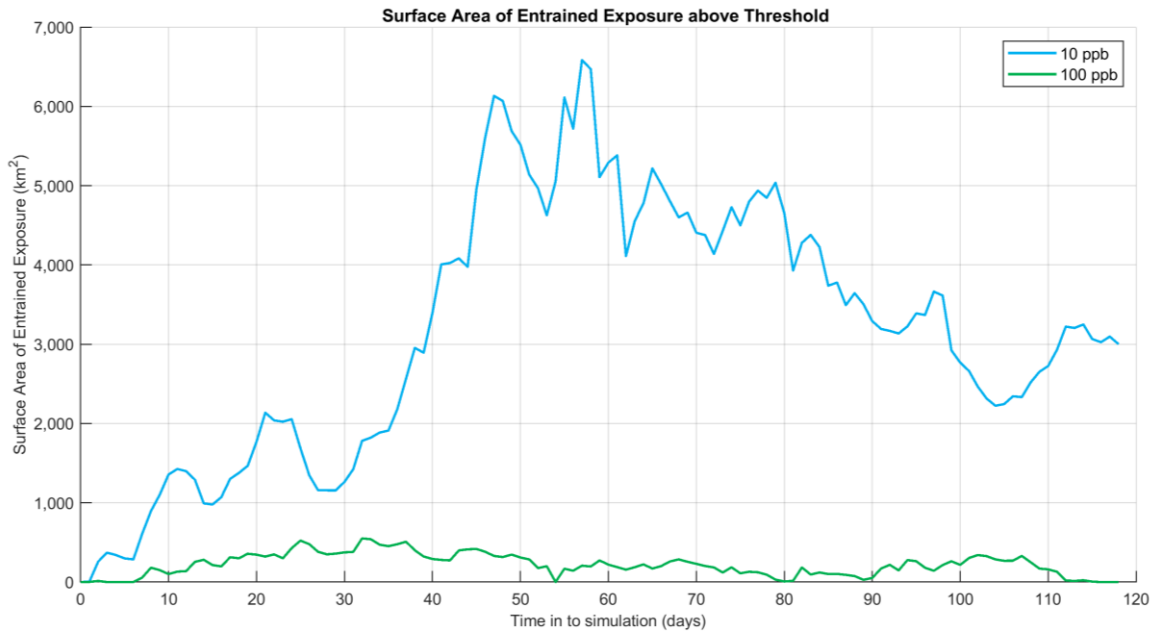


Figure 11-17 Time series of the predicted area of entrained hydrocarbon exposure for the trajectory with the largest area of entrained hydrocarbons above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

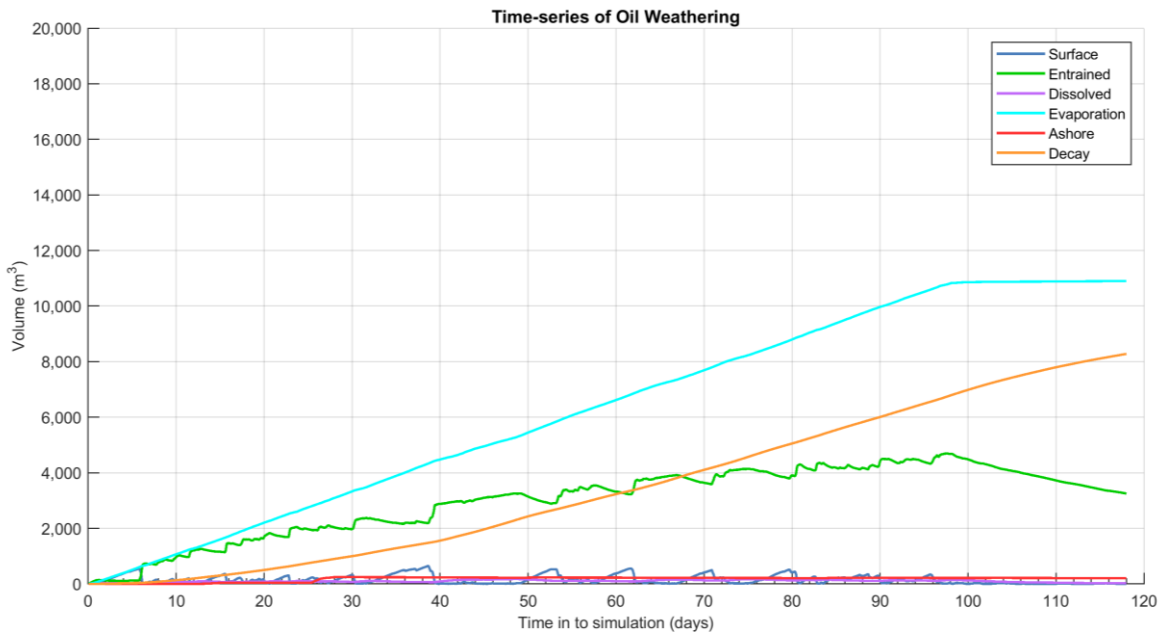


Figure 11-18 Predicted weathering and fates graph for the trajectory with the largest area of entrained hydrocarbon exposure above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

11.2.6 Deterministic Case: Largest area of dissolved hydrocarbons above 50 ppb

The deterministic trajectory that resulted in the largest area of dissolved hydrocarbons above 50 ppb was identified as run number 9, which started on the 2nd of June 2016. Figure 11-19 map illustrates the zones of potential dissolved hydrocarbon exposure for run 9.

Figure 11-20 displays the time series of the area of dissolved hydrocarbons at the low (10 ppb), moderate (50 ppb) and high (400 g/m²) thresholds over the 118-day simulation.

Figure 11-21 presents the fates and weathering graph for the corresponding single spill trajectory and Table 11-15 summarises the mass balance at the peak and at end of the simulation.

Table 11-15 Summary of the mass balance for the trajectory that resulted in the largest area of dissolved hydrocarbon exposure above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

Exposure Metrics	Peak Volume	Day of occurrence	Volume at day 118
Surface (m ³)	650	65.92	2
Entrained (m ³)	4,652	98.08	3,208
Dissolved (m ³)	172	42.38	25
Evaporation (m ³)	10,690	118.00	10,690
Decay (m ³)	8,803	118.00	8,803
Ashore (m ³)	29	67.46	24

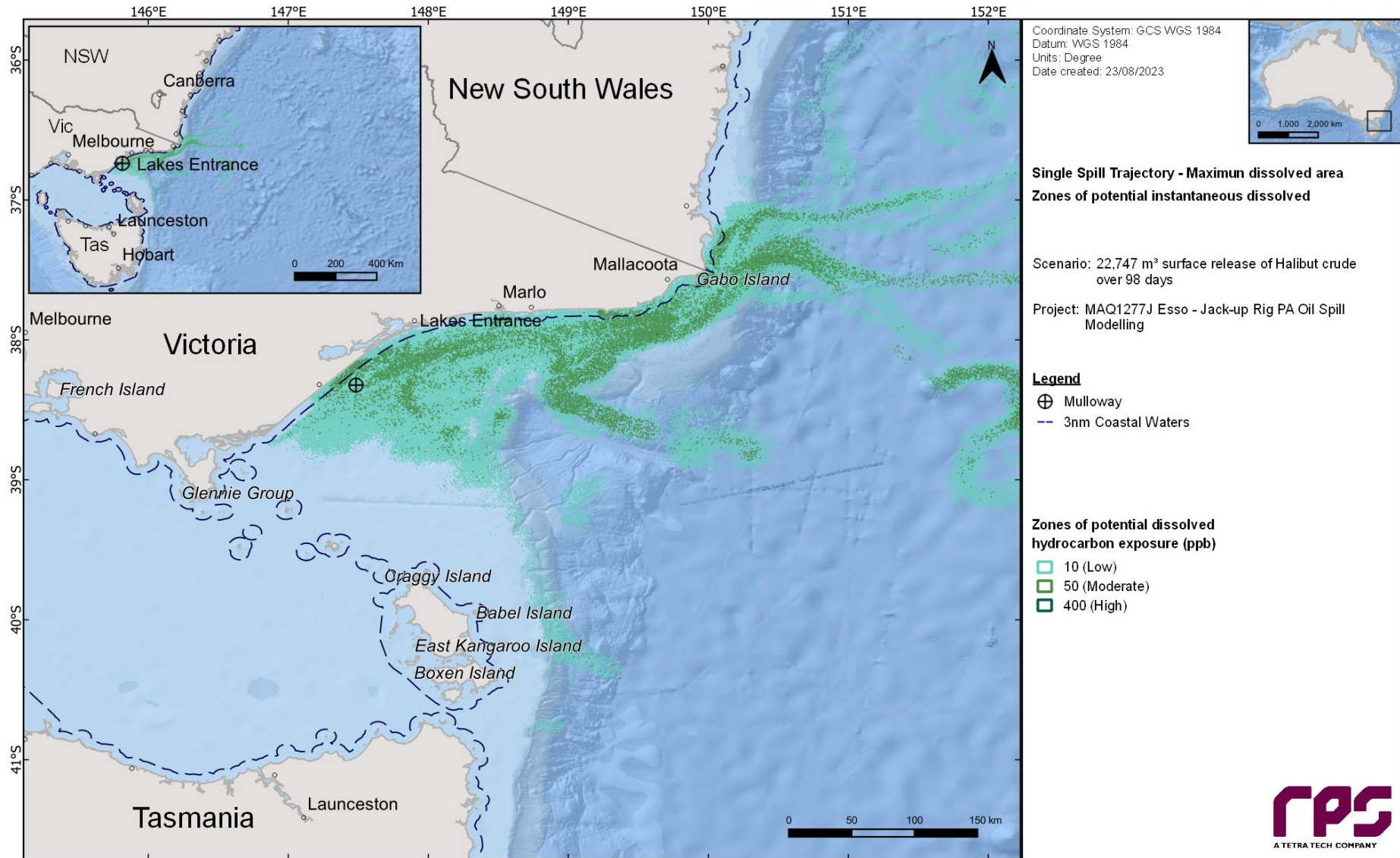


Figure 11-19 Zones of potential dissolved hydrocarbon exposure for the trajectory with the largest area of dissolved hydrocarbons above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

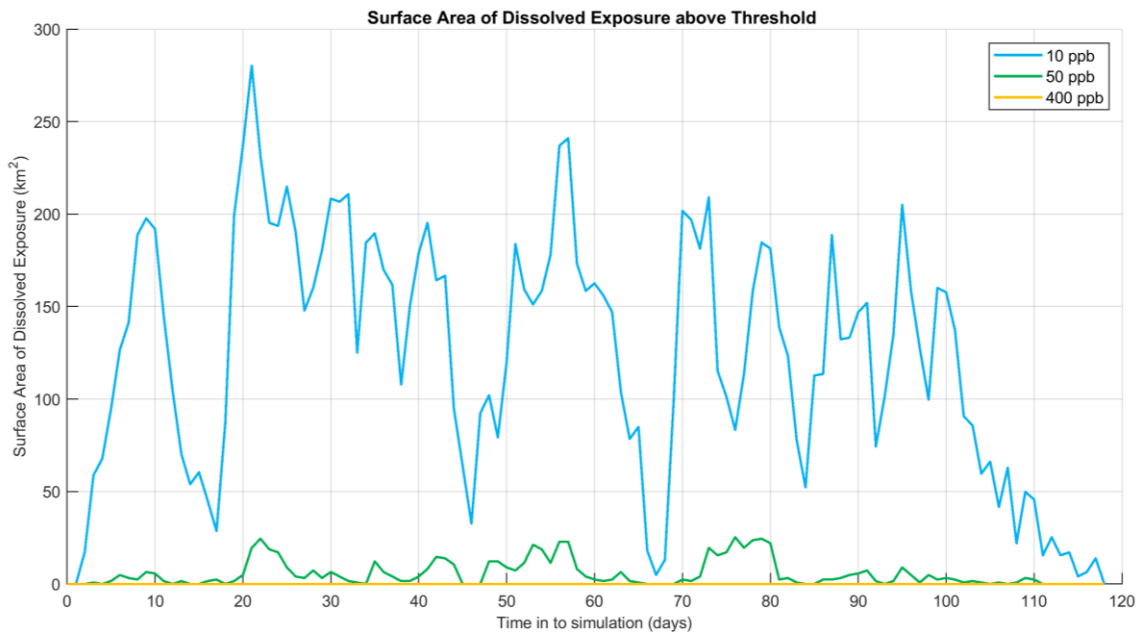


Figure 11-20 Time series of the area of dissolved hydrocarbon exposure for the trajectory with the largest area of dissolved hydrocarbons above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

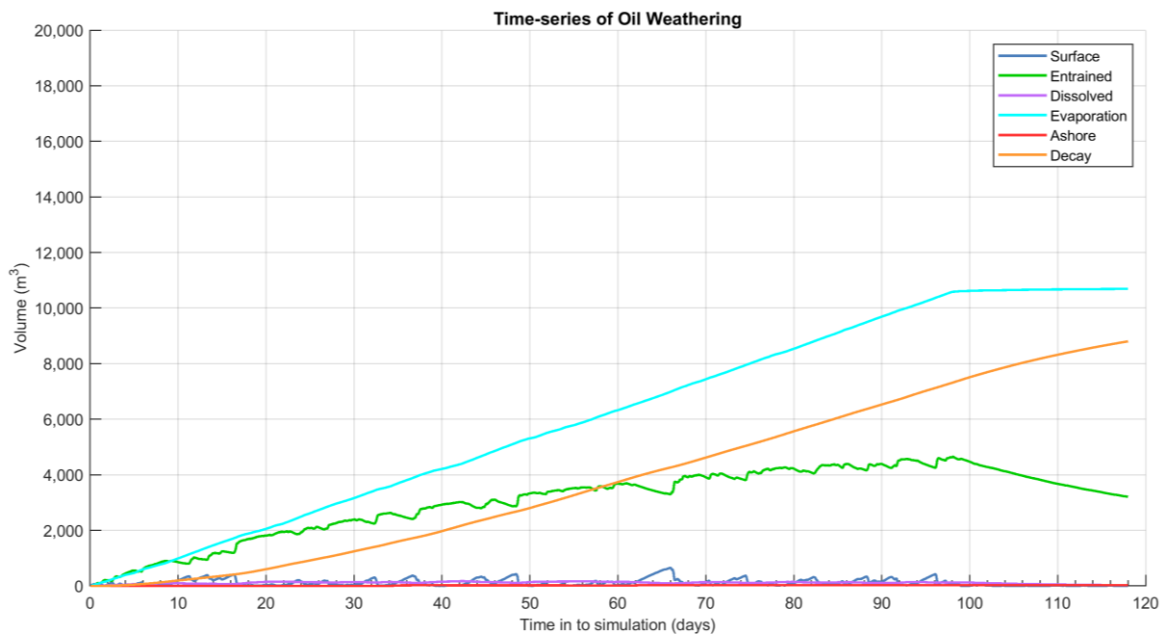


Figure 11-21 Predicted weathering and fates graph for the trajectory with the largest area of dissolved hydrocarbons above 10 ppb. Results are based on a 22,747 m³ surface release of Halibut crude at Mulloway over 98 days.

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Appendix J: Jasco Sound Modelling report

Esso Bass Strait Operations Modelling

Assessing Marine Fauna Sound Exposures

JASCO Applied Sciences (Australia) Pty Ltd

August 2022

Submitted to:

Offshore Environmental Engineer
Esso Australia Pty. Ltd.
Contract 4501679853

Authors:

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The results presented herein are relevant within the specific context described in this report. They could be misinterpreted if not considered in the light of all the information contained in this report. Accordingly, if information from this report is used in documents released to the public or to regulatory bodies, such documents must clearly cite the original report, which shall be made readily available to the recipients in integral and unedited form.

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Executive Summary

JASCO Applied Sciences (Australia) performed a modelling study of underwater acoustic noise levels related to Esso's base business operations and future decommissioning operations in Bass Strait. This study considers the operation of Esso's Barracouta (BTA) and Kingfish B (KFB) production platforms, the operation of a generic production platform, and the operations associated with a future drilling campaign involving a generic jack-up rig. These operations were modelled with and without attendant vessels; in total, 17 scenarios were modelled.

The results are presented as distances from the platform or rig at which underwater sound levels reached thresholds associated with potential injury and behavioural response in marine mammals. The primary species of interest are pygmy blue, southern right and humpback whales, common and bottlenose dolphins and Australian fur seals; therefore the functional hearing groups considered were low- and high-frequency cetaceans and other carnivores in water (OCW; including otariids).

Further to the Noise Monitoring Study conducted in March-April 2021 (McPherson et al. 2022), distances to the pertinent sound level thresholds were modelled for the BTA and KFB platforms on their own, with one attendant vessel, and with two attendant vessels (Scenarios 1–6). The results show that noise levels from production platforms in isolation do not produce noise levels high enough for potential injury, and the distances to the behavioural response threshold are relatively small (30 m at BTA; 115 m at KFB). The presence of attendant vessels at the platforms, however, results in TTS exceedance close to the platform (up to 300 m), with PTS not predicted. The distances to potential behavioural response increase significantly with the presence of attendant vessels: up to 2.1 km at the KFB platform with two attendant vessels.

Results at the BTA platform were compared to results from the modelling study for the Esso Seahorse/Tarwhine Plug and Abandonment (P and A) Campaign (McPherson and Koessler 2020). In general, the distances to the effect thresholds were greater in the prior study than at the BTA platform. This can be attributed to two main factors: the difference in the jack-up rig versus production platform MSL spectra, and the difference in the attendant vessel spectra.

The second set of scenarios (Scenarios 7 to 12) assesses distances associated with an offshore supply vessel (OSV) alone, the platforms with a Multi-Purpose Supply Vessel (MPSV) permanently alongside, and the platforms with a MPSV plus an OSV alongside for periods of 1 and 2 h. The results show that the distance to potential TTS to marine mammals around the OSV is similar to the length of the vessel when that vessel is stationary for 24 h; the distance to behavioural response is on the order of 600 m. The presence of the MPSV at the platform results in short distances to potential PTS (up to 75 m) and TTS (up to 380 m) only toward the attendant vessel permanently alongside; distances are shorter or nil in the other directions. The presence of the OSV for periods of 1 to 2 h does not significantly change the distances to potential PTS and TTS, and increases the distance for behavioural response by up to 300 m (from 2.4 to 2.7 km at the KFB platform).

Results from this second set of scenarios show longer distances to injury and behavioural response thresholds than the first set of scenarios because the monopole sound level (MSL) spectra for the vessels modelled alongside the platforms were derived from monitoring while at DP, in isolation to the platforms; the maximum continuous rating (MCR) level used by the vessels operating close a platform was likely lower than while operating at DP, away from any platform. Results for Scenarios 7 to 12 are therefore considered realistically conservative.

The third set of scenarios (Scenarios 13 to 15) considers a generic production platform in isolation, with a MPSV permanently alongside, and with a MPSV permanently alongside plus an OSV alongside for periods of 1 and 2 h. Results show no potential for marine mammal PTS or TTS, and potential behavioural response up to 30 m from the platform in isolation. The presence of the MPSV and the OSV resulted in distances to low-frequency cetacean TTS and marine mammal behavioural thresholds that are similar, but slightly longer than those estimated for the KFB platform in the second set of

scenarios. This increase in distances is partly due to the difference in water depth between the two locations.

The last set of scenarios in this study relates to a future drilling campaign; they represent drilling operations at the jack-up rig, with a support vessel standing by in a nominal 2 km × 4 km box, 500 m from the rig. The last scenario adds a supply vessel alongside the rig for periods of 2 and 8 h. The results show distances to potential TTS of up to 245 m around the rig for low-frequency cetaceans. This distance is only slightly influenced by the presence of an OSV and does not change with the location of the support vessel. The distance to behavioural response threshold, however, is largely influenced by the location of the support vessel in relation to the jack-up rig; it varied between 5.6 and 7.9 km when the support vessel was at its closest and farthest location from the rig.

1. Introduction

JASCO Applied Sciences (Australia) performed a modelling study of underwater acoustic noise levels related to Esso's base business operations and future decommissioning operations in Bass Strait. The modelling study considered the operation of Esso's Barracouta (BTA) and Kingfish B (KFB) production platforms, the operation of a generic production platform, and the drilling operation of a generic jack-up rig. These operations were modelled with and without attendant vessels. For these operations, the noise levels at the source were based on measurements obtained during a Noise Monitoring Study conducted in March-April 2021 (McPherson et al. 2022). The likely impact of simultaneous underwater cutting activities on the modelled results is also discussed; this type of activity was not measured during the Noise Monitoring Study. The modelled scenarios are detailed in Section 1.1.

The modelling study predicted the distances from the platform or rig at which underwater sound levels reached thresholds associated with potential injury and behavioural response in marine mammals. The primary species of interest are pygmy blue, southern right and humpback whales, common and bottlenose dolphins and Australian fur seals; therefore the functional hearing groups considered were low- and high-frequency cetaceans and otariids. The marine mammal noise effect criteria used in this study are discussed in Section 2.

In this report, Section 3 summarises the methods and parameters used to model the sound fields. Section 4 presents the results as tables of distances to sound level thresholds associated with the possibility of permanent threshold shift (PTS), temporary threshold shift (TTS) and behavioural response. Maps are also used to show the noise footprints associated with the modelled activities. Section 5 discusses the results; a comparison between the presented results and previous modelling estimates is included. More details about the terminology used in this report can be found in the Glossary or in Appendix A; more details about the methodology used is provided in Appendix B.

1.1. Modelling Scenarios

Bass Strait is located off the Gippsland coast, south-eastern Australia; Figure 1 shows an overview of the study area. The BTA platform lies 26 km off the coast in 46 m water depth, and the KFB platform is located approximately 78 km offshore in 76 m water depth.

Further to the Noise Monitoring Study conducted in March-April 2021 (McPherson et al. 2022), distances to the pertinent sound level thresholds (listed in Section 2) were modelled for the BTA and KFB platforms on their own (Scenarios 1 and 4), with one attendant vessel (Scenarios 2 and 5) and with two attendant vessels (Scenarios 3 and 6). For these first six scenarios, listed in Table 1, the acoustic source levels were derived during the Noise Monitoring Study (McPherson et al. 2022). In Section 5.1.1, the results from these scenarios are compared to those from JASCO's modelling study for the SHA/TWA P&A campaign (McPherson and Koessler 2020).

The second set of scenarios (Scenarios 7 to 12; Table 1) are used to assess distances associated with a supply vessel alone (the *Skandi Feistein*), the platforms with a Multi-Purpose Supply Vessel (MPSV) permanently alongside, and the platforms with a MPSV plus a supply vessel alongside. While the MPSV is assumed alongside for at least 24 h, the supply vessel is assumed stationary (away from the platform) for periods of 2 h and 24 h (Scenarios 7 and 10), and alongside the platform for periods of 1 h and 2 h (Scenarios 9 and 12).

A generic production platform is considered in the third set of scenarios (Scenarios 13 to 15; Table 1). The acoustic source levels for this platform were derived from the analysis of the spectra for the BTA and KFB platforms, and it was located between the BTA and BTA and KFB platforms, in 60 m of water. Here again, the platform was modelled alone (Scenario 13), with one attended vessel permanently alongside (Scenario 14) and with one attended vessel plus one supply vessel alongside for a duration of 1 and 2 h (Scenario 15).

The last set of scenarios (Scenarios 16 and 17; Table 1) are related to a future drilling campaign and considers the drilling operations of a jack-up rig, an attendant support vessel and a supply vessel. Here, the support vessel is assumed to be keeping station within a nominal 2 km × 4 km box, just outside the 500 m zone around the jack-up rig, whilst the supply vessel is assumed alongside the rig for periods of 2 h and 8 h.

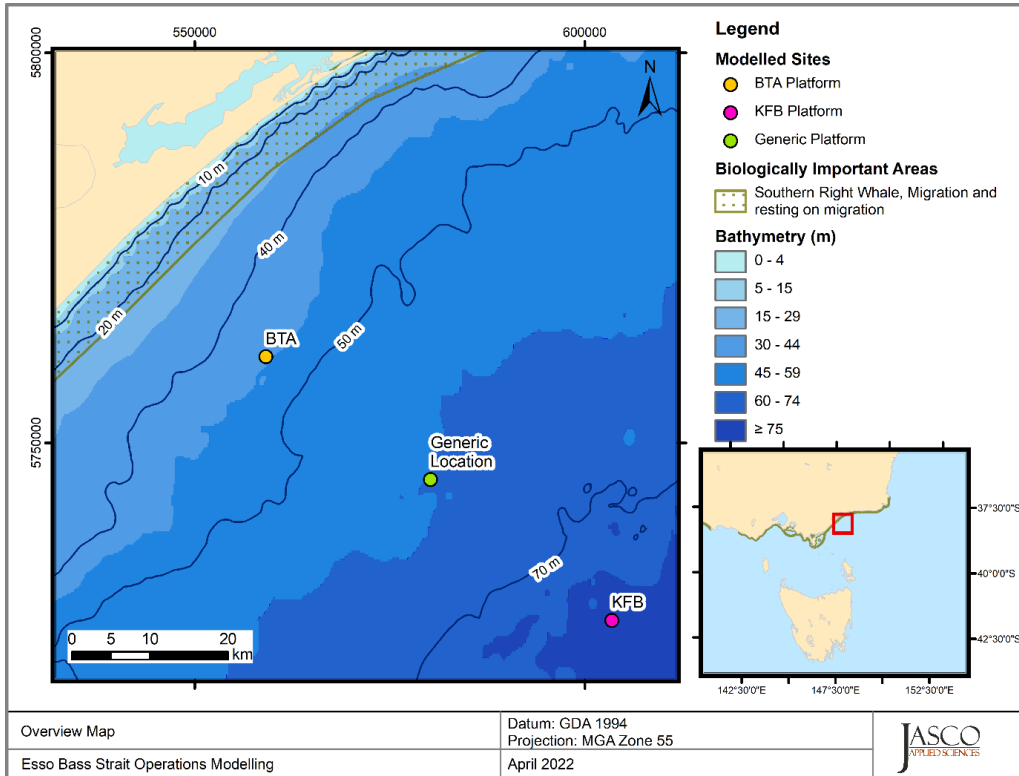


Figure 1. Overview of the Esso Bass Strait Operations modelling study area.

Table 1. List of modelled scenarios. BTA: Barracouta platform; KFB: Kingfish B platform; OSV: offshore supply vessel; MPSV: multi-purpose supply vessel.

Scenario			Main sound source location			
Group	#	Description	Name	Latitude, Longitude	Easting, Northing UTM Zone 55S	Water depth (m)
Platforms with/without one or two attendant vessels	1	BTA platform	BTA	38° 17' 47.796" S, 147° 40' 33.708" E	559114, 5761059	44
	2	BTA platform with one attendant vessel				
	3	BTA platform with two attendant vessels				
	4	KFB platform	KFB	38° 35' 49.524" S, 148° 11' 17.124" E	603462, 5727264	75
	5	KFB platform with one attendant vessel				
	6	KFB platform with two attendant vessels				
Supply vessel, platforms with attendant vessel and with/without supply vessel	7	OSV stationary for 2 and 24 h periods, away from BTA platform	BTA area	38° 19' 34.586" S, 147° 42' 39.964" E	562156, 5757744	49
	8	BTA platform with MPSV permanently on location	BTA	38° 17' 47.796" S, 147° 40' 33.708" E	559114, 5761059	44
	9	BTA platform with a MPSV permanently on location and an OSV on station for 1 and 2 h periods				
	10	OSV stationary for 2 and 24 h periods, away from KFB platform				
	11	KFB platform with MPSV permanently on location	KFB area	38° 33' 32.332" S, 148° 10' 13.724" E	601982, 5731513	76
	12	KFB platform with a MPSV permanently on location and an OSV on station for 1 and 2 h periods				
Generic platform with/without attendant vessel and supply vessel	13	Generic platform	Generic location between BTA and KFB	38° 26' 12.581" S, 147° 55' 08.855" E	580217, 5745316	60
	14	Generic platform and a MPSV permanently on location				
	15	Generic platform with a MPSV permanently on location and an OSV on station for 1 and 2 h periods				
Jack-up rig and attendant vessel with/without supply vessel	16	Jack-up rig drilling and a support vessel permanently on location	Generic location between BTA and KFB	38° 26' 12.581" S, 147° 55' 08.855" E	580217, 5745316	60
	17	Jack-up rig drilling with a support vessel permanently on location and an OSV on station for 2 and 8 h periods				

2. Marine Mammal 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 a negative effect on animals. Whether acoustic exposure 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 (2012), Popper et al. (2014), United States National Marine Fisheries Service (NMFS 2018) and Southall et al. (2019). 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 h period. Appropriate subscripts indicate any frequency weighting applied (see Appendix A.4). 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, and sound levels presented in literature for fauna with no defined thresholds:

1. Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Southall et al. (2019) for the onset of permanent threshold shift (PTS) and temporary threshold shift (TTS) in marine mammals for non-impulsive sound sources.
2. Marine mammal behavioural threshold based on the current interim US National Oceanic and Atmospheric Administration (NOAA) (2019) criterion for marine mammals of 120 dB re 1 μ Pa (SPL; L_p) for non-impulsive sound sources.

Section 2.1 and Appendix A.3 expand on the thresholds for marine mammals.

2.1. Marine Mammals

The criteria applied in this study to assess possible effects of non-impulsive noise exposure on marine mammals are summarised in Table 2. Cetaceans were identified as the hearing group requiring assessment. 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. Of particular note, whilst the newly published Southall et al. (2021) provides recommendations and discusses the nuances of assessing behavioural response, the authors do not recommend new numerical thresholds for onset of behavioural responses for marine mammals.

Table 2. Criteria for effects of non-impulsive noise exposure, including vessel noise, for marine mammals: Unweighted SPL and SEL_{24h} thresholds.

Hearing group	NOAA (2019)	Southall et al. (2019)	
	Behaviour	PTS onset thresholds (received level)	TTS onset thresholds (received level)
	SPL (L_p ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² -s)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² -s)
Low-frequency (LF) cetaceans	120	199	179
High-frequency (HF) cetaceans		198	178
Other carnivores (including otariids) in water		219	199

L_p denotes sound pressure level period and has a reference value of 1 μ Pa.

L_E denotes cumulative sound exposure over a 24 h period and has a reference value of 1 μ Pa²-s.

2.1.1. Behavioural Response

The NMFS non-pulsed 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 were therefore determined to occur in areas ensonified above an unweighted SPL of 120 dB re 1 μ Pa (NMFS 2014, NOAA 2019). Appendix A.3 provides more information about the development of these criteria.

2.1.2. Injury and Hearing Sensitivity Changes

There are two categories of auditory threshold shifts or hearing loss: permanent threshold shift (PTS), a physical injury to an animal's hearing organs; and 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.

To assist in assessing the potential for effect on marine mammals, this report applies the criteria recommended by Southall et al. (2019), considering both PTS and TTS (see Table 2). Appendix A.3 provides more information about the Southall et al. (2019) criteria.

3. Methods and Parameters

JASCO's Marine Operations Noise Model (MONM-BELLHOP), in combination with the various operations' source level spectra, was used to predict the site-specific underwater acoustic sound fields. This section provides a high-level description of the model inputs. It is divided into subsections detailing the sound sources considered, the applied modelling technique and the project-specific configuration. The terminology used is defined in the Glossary and in Appendix A. More details about the methods and the input parameters can be found in Appendix B.

3.1. Sound Sources

In this study, operational underwater sound is produced by production platforms, vessels, and a jack-up drill rig. The various monopole source level (MSL) spectra used to model the 17 scenarios and their provenance are described in Sections 3.1.1 to 3.1.3.

3.1.1. Production Platforms

The equipment operating onboard any platform can contribute to underwater sound; it is expected that the dominant pathway for sound generation is structure-borne (i.e., vibration from machinery passing through the legs or hull) as opposed to air-borne (Spence et al. 2007). Fixed platforms and jack-up rigs have lower radiated sound levels than floating platforms (Spence et al. 2007). The equipment on floating platforms can be located below the water line, while the machinery on elevated platforms is located above the waterline. Underwater noise produced from platforms standing on metal jack-up legs is also lower given the small surface areas available for sound transmission compared to that of the hull of a floating platform.

3.1.1.1. BTA and KFB Platforms

The BTA platform is a fixed installation consisting of an eight-legged steel piled jacket with 10 conductor slots; the Kingfish B platform is a fixed installation consisting of an eight-legged steel piled jacket with 21 conductor slots. During the monitoring program (McPherson et al. 2022), the BTA and KFB platforms operated normally. The monopole source level spectra for the platforms in isolation were derived during the monitoring project; these spectra (see Figure 2) were used in scenarios 1 (BTA) and 4 (KFB), as well as Scenarios 7 to 9 (BTA) and 10 to 12 (KFB).

The spectral levels for the BTA platform (broadband MSL of 150.6 dB re 1 μ Pa; 10 Hz to 63 kHz) present higher levels at for higher frequencies (≥ 10 kHz) which is likely due to the sound of snapping shrimps. On the other hand, the KFB platform (broadband MSL of 156.7 dB re 1 μ Pa; 10 Hz to 63 kHz) presents higher levels at low frequencies (< 80 Hz), likely due to mooring flow noise.

As for the back propagation of the received levels in the monitoring project, the monopole sound sources representing the platforms in this study were placed in the middle of the water column, that is, at 22 m for the BTA platform and 38 m for the KFB platform.

Distances to PTS, TTS and behavioural thresholds were also calculated for the platforms in operation with one and two attendant vessels in the vicinity of the platforms (Scenarios 2, 3, 5 and 6). For these scenarios, the source level spectrum for the platform in isolation (used for Scenarios 1 and 4) was replaced by the MSL spectrum representing all sound sources, i.e., the platform plus one or two attendant vessels, which were also derived during the monitoring project (McPherson et al. 2022). The first attendant vessel was the *Skandi Feistein* and the second was the *MMA Leeuwin* (extended details are provided in Section 3.1.2). In these scenarios, since the vessels are the main sources of sound, the modelled monopole source was located at 3.6 m, the mean depth at which cavitation would

occur for recorded vessels. Figure 2 compares these spectra to the spectrum for the BTA (left) and KFB (right) platforms in isolation.

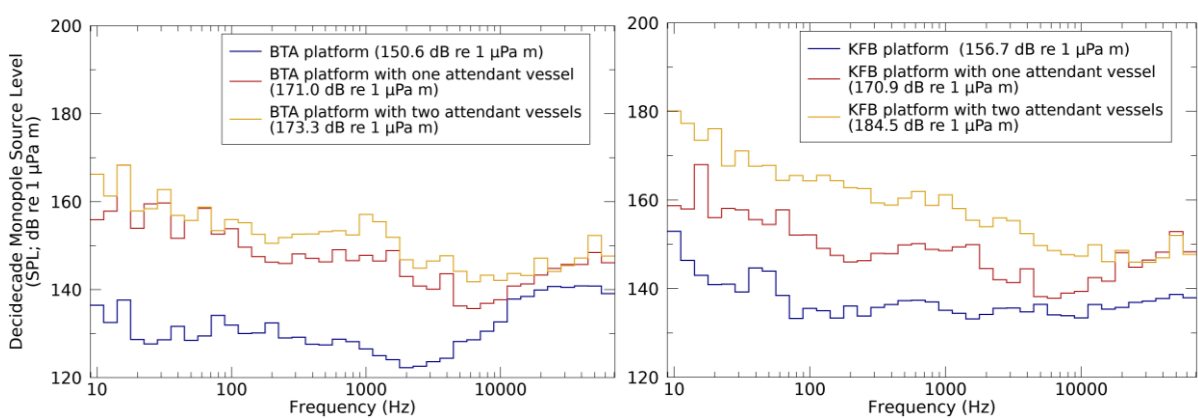


Figure 2. Monopole Source Level (MSL) spectra representing (left) the BTA and (right) the KFB platforms in isolation (blue), with one (red) and with two (yellow) attendant vessels.

3.1.1.2. Generic Platform

The monitoring program recommended the creation of a composite platform MSL spectrum to better represent a generic platform. To create a conservative, but generic spectra, the BTA platform spectral levels were used at frequency ≤ 80 Hz and the level for the KFB platform were used at all higher frequencies. This eliminates the possible flow noise at low frequencies, and the noise from snapping shrimps at high frequencies, as mentioned above (Section 3.1.1.1). The monopole source representing the generic platform was also modelled in the middle of the water column, i.e., at a depth of 30 m. Figure 3 compares the spectra for the BTA, KFB and generic platforms.

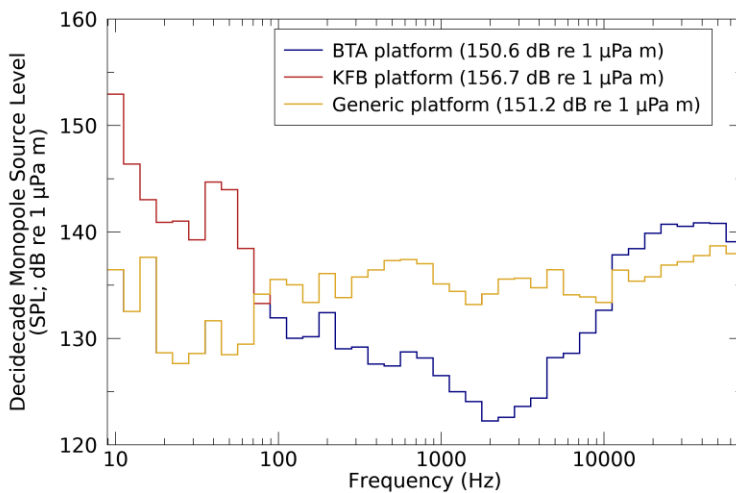


Figure 3. Monopole Source Level (MSL) spectra representing the BTA (blue) and the KFB platforms (red) and the generic platform (yellow).

3.1.2. Vessels

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. In general, a vessel produces broadband acoustic energy with most of the energy emitted below a few kilohertz. Sound levels tend to be the highest when

thrusters are used to position the vessel and when the vessel is transiting at high speeds. Sound from onboard machinery, particularly sound below 200 Hz, dominates the sound spectrum before cavitation begins (Spence et al. 2007). 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).

Three similar classes of vessels were modelled in this study: an offshore supply vessel (OSV), a multi-purpose supply vessel (MPSV) and a support vessel. The OSV and MPSV were modelled while alongside the production platforms, using dynamic positioning (DP) system to keep station (scenarios 7 to 17). The support vessel was modelled while transiting through a defined standby box near the jack-up rig (scenarios 16 and 17 only).

During the monitoring program, measurements from two supply vessels were analysed (McPherson et al. 2022). The derived decidecade MSL spectra were used in this study. The OSV and the support vessel spectra were derived from measurements of the *Skandi Feistein* (Figure 4; left), a DP Class 2 vessel operated by the DOF Group (DOF Group 2022). The MPSV spectra were derived from measurements of the *MMS Leeuwin*, a DP Class 2 vessel operated by MMA Offshore Limited (MMA Offshore Limited 2022). Figure 5 compared the MSL spectra of the vessels used in this study. Note that the OSV modelled at the KFB platform is defined by more conservative MSL than at the BTA platform. Therefore, it was also used with the generic platform (scenario 15) and the jack-up rig (scenario 17).

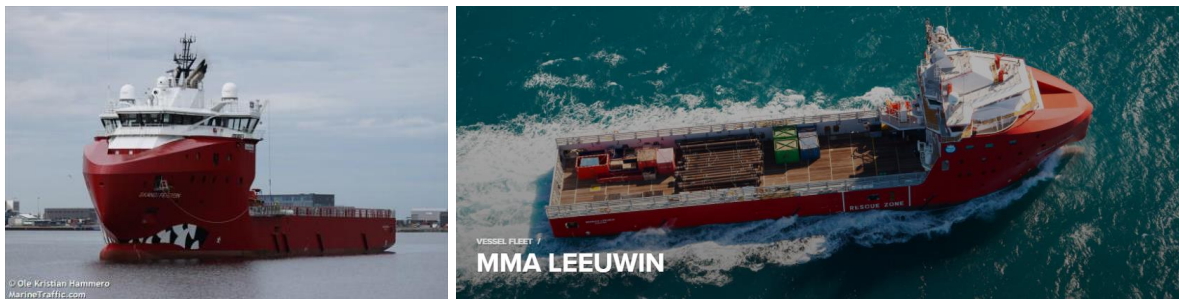


Figure 4. Photographs of the *Skandi Feistein* (left; photo credit Marine Traffic) and the *MMA Leeuwin* (right; photo credit MMA Offshore Limited).

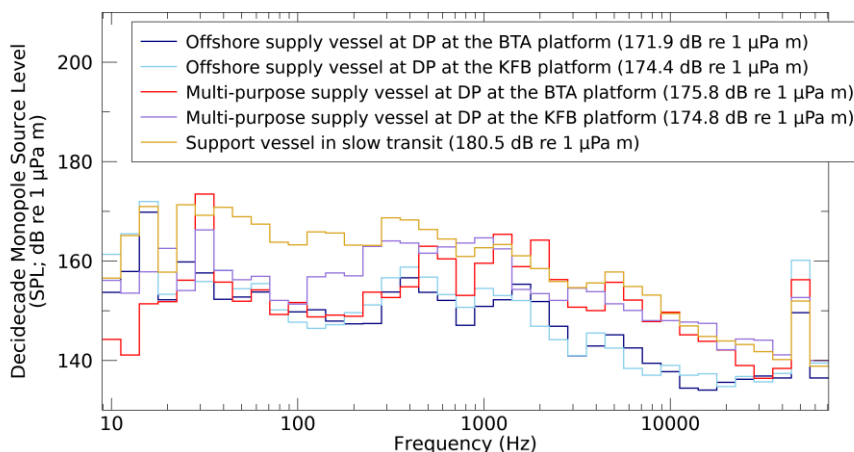


Figure 5. Monopole Source Level (MSL) spectra representing the vessels used in multiple scenarios.

3.1.3. Jack-Up Drill Rig

Jack-up rigs are a type of mobile offshore drilling unit; they are not fixed, like the BTA and KFB platforms, and are usually less self-sufficient than fixed platforms. Therefore, they usually require a support vessel standing-by within a certain distance from the rig.

Todd et al. (2020) reported on the near-field recordings of underwater noise from the sides of a jack-up rig during drilling operations in the North Sea (water depth of 40 m). Measurements were made of the *Noble Kolskaya*, a three-legged cantilever type jack-up rig, 69 m long and 80 m wide (Todd et al. 2020, Wikipedia 2022). The reported decidecade received levels for drilling operations (25 Hz to 12.5 kHz) were back propagated assuming spherical spreading over a distance of 60 m, to provide conservative estimates of the MSL. The spectrum was extrapolated by continuing the attenuation of the last decidecade, that is assuming a 10 dB per decade at frequencies below 25 Hz, and 25 dB per decade at frequencies above 12.5 kHz. Figure 6 compares the spectrum for the jack-up drilling rig to the spectra for the OVS and the support vessel modelled in operation with the rig (scenarios 16 and 17).

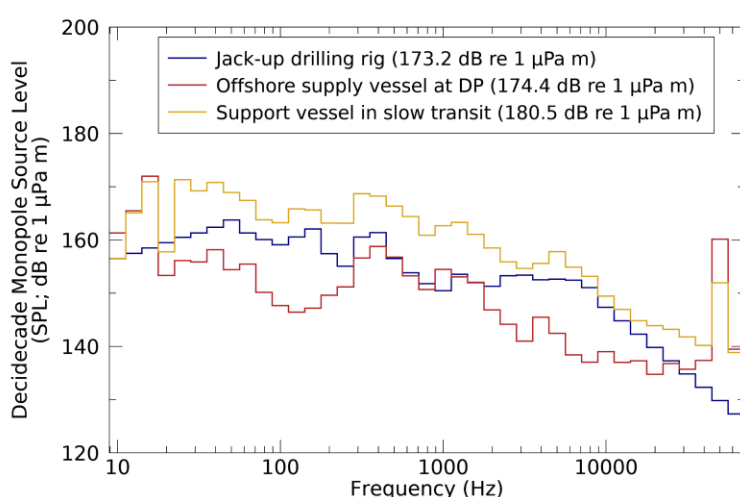


Figure 6. Monopole Source Level (MSL) spectra representing the jack-up rig during drilling operations (blue), with the offshore supply vessels (red) and the support vessel transiting in the standby box (yellow).

3.2. Sound Propagation Model and Configuration

JASCO's Marine Operations Noise Model (MONM-BELLHOP; see Appendix B.2.2) was used to predict the underwater acoustic propagation loss at the modelled sites at frequencies of 10 Hz to 63 kHz. This model considers the environmental variations along the propagation path (see Appendix B.1). The final acoustic fields combine the acoustic source levels (see Section 3.1) with the site-specific propagation loss fields.

To assess sound levels with MONM-BELLHOP, the sound field modelling calculated propagation losses up to distances of 100 km from the source in each cardinal direction, 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 $\Delta\theta = 2.5^\circ$ for a total of $N = 144$ radial planes. Receiver depths were chosen to span the entire water column over the modelled areas, from 1 m to a maximum of 2700 m, with step sizes that increased with depth. 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 63 kHz. The MONM and BELLHOP results were combined to produce results for the full-frequency range of interest.

To produce the maps of the sound footprint, received level isopleths, and to calculate distances to specified sound level thresholds, the sound field on radial planes are resampled (by linear triangulation) to produce a regular Cartesian grid (with a cell size of 20 m) and the maximum-over-depth level is calculated at each grid point within the modelled region. The sound field grids from all sources are then summed (see Equation A-3) to produce the cumulative sound field grid. The contours and threshold ranges are calculated from these flat Cartesian projections of the modelled acoustic fields.

3.3. Accumulated SEL

While the criterion for potential behavioural responses is based on SPL, the criteria for potential PTS and TTS are based on dose-type measurements, i.e., the SEL accumulated over a 24 h period. Platforms, drill rigs and vessels continuously produce sound while in operation. The reported source levels are usually in terms of sound pressure levels (SPL), representing the average acoustic level of each source that could be recorded at any time during specific operations. It is equivalent to the SEL accumulated over 1 s (more details are provided in Appendix A.1). The evaluation of the cumulative sound field (e.g., in terms of 24 h SEL) depends on the number of seconds of operation during the accumulation period (e.g., 24 h), as well as the sound source location.

For sound sources that are stationary (i.e., the platforms, the jack-up rig and the vessels while at DP), the 1-s sound field is simply accumulated over the duration of the operation within the prescribed accumulative period of 24 h. For vessels in transit (i.e., the standby vessel in Scenarios 16 and 17), it would be computationally prohibitive to perform sound propagation modelling for every vessel position with an interval of 1 s over a period of 24 h. In the present case, the vessel speed (2 m/s or 4 knots) and, therefore, the distance between consecutive vessel positions, is small enough that the environmental parameters that influence sound propagation are virtually the same for many positions. Consequently, the acoustic fields can be modelled for a subset of vessel positions over the 24 h period. After sound fields from representative vessel locations are calculated, they are adjusted to account for the nearby positions. For Scenarios 16 and 17, 181 positions of the support vessel (i.e., one position every 8 minutes) were selected using the random walk method to simulate the vessel keeping station within a 2 km × 4 km box.

Although estimating the cumulative sound field with the described approach is not as precise as modelling sound propagation at every vessel position, small-scale, site-specific sound propagation features tend to blur and become less relevant when sound fields from adjacent positions are summed. Larger scale sound propagation features, primarily dependent on water depth, dominate the cumulative sound field. The accuracy of the present method acceptably reflects those large-scale features, thus providing a meaningful estimate of a wide area SEL field in a computationally feasible framework.

4. Results

The maximum-over-depth sound fields for the 17 modelled scenarios (described in Section 1.1) are presented below in two formats: as tables of distances to sound levels thresholds and, where the distances are long enough, as contour maps showing the directivity and extent of the various sound level isopleths. The tabulated distances were calculated from the centre of the platform or rig. When vessels are alongside, this distance is maximal in the direction of the vessel and may not be as long in the opposite direction.

Section 4.1 presents the results for Scenarios 1 to 6: the operation of the BTA and KFB production platforms in isolation, with one attendant vessel, and with two attendant vessels. These results are later compared with modelling results conducted before the monitoring program (see Section 5.1.1).

Section 4.2 presents the results for Scenarios 7 to 12: a stationary OSV in isolation, the BTA and KFB platforms with a MPSV permanently alongside, and the platforms with a MPSV plus an OSV alongside for 1 h or 2 h. Unlike for Scenarios 1 to 6, the sound sources for the platforms and vessels were modelled separately and the individual fields were summed to create the composite sound fields. This method allows the specific positioning of the vessels alongside the platform (10 m separation was assumed between the edge of the platform and the vessel) and for limiting the duration of the supply operations to less than 24 h.

Section 4.3 presents the results for Scenarios 13 to 15: a generic production platform in isolation, with an MPSV permanently alongside, and with an MPSV plus an OSV alongside for 1 h or 2 h. The same modelling method as for Scenarios 7 to 12 was used here. The generic platform was positioned in 60 m of water, between the BTA and the KFB platforms, and representative of the Esso Bass Strait platforms and assets in general.

Finally, Section 4.4 presents the results for Scenarios 16 and 17: a jack-up rig during drilling operation with a support vessel on standby, and with an OSV alongside the jack-up rig for 2 h and 8 h. The support vessel is assumed to be transiting at a speed of 4 knots within a 2 km x 4 km box, with one of its boundaries 500 m from the jack-up rig. Here, distances to behavioural response thresholds are given for two limiting cases: when the support vessel is closest and farthest from the rig.

4.1. BTA and KFB Platforms with/without One or Two Attended Vessels

Table 3. *Scenarios 1 to 6*: Distances (m) to permanent threshold shift (PTS), temporary threshold shift (TTS), and behavioural response of low-frequency cetaceans (LFC), high-frequency cetaceans (HFC), and other carnivores in water (OCW). Scenarios detailed in Table 1.

Effect thresholds			Scenario											
			BTA platform						KFB platform					
			1		2		3		4		5		6	
			$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}
Injury	LFC	PTS	-	-	-	-	-	-	-	-	-	-	-	
		TTS	-	-	30	30	90	100	-	-	45	45	300	305
	HFC	PTS	-	-	-	-	-	-	-	-	-	-	-	
		TTS	-	-	-	-	20	20	-	-	20	20	30	30
	OCW	PTS	-	-	-	-	-	-	-	-	-	-	-	
		TTS	-	-	-	-	-	-	-	-	-	-	-	
Behavioural response			30	30	425	440	740	775	115	115	300	305	2120	2190

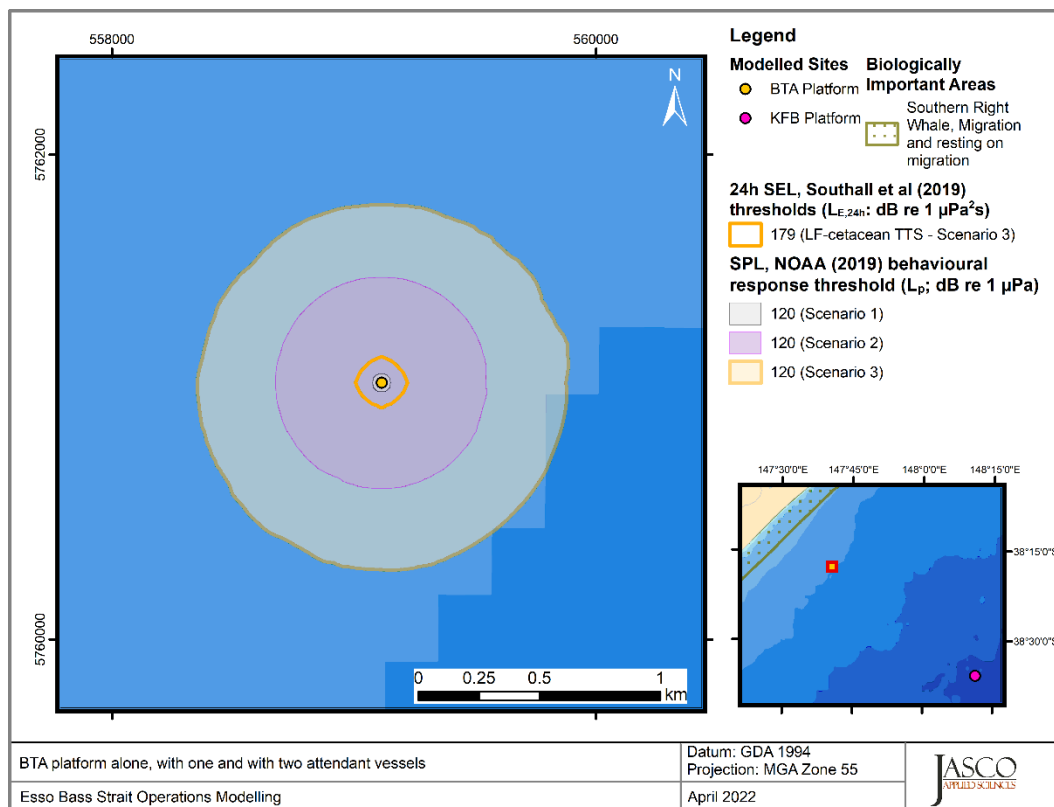


Figure 7. *Scenarios 1 to 3*: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

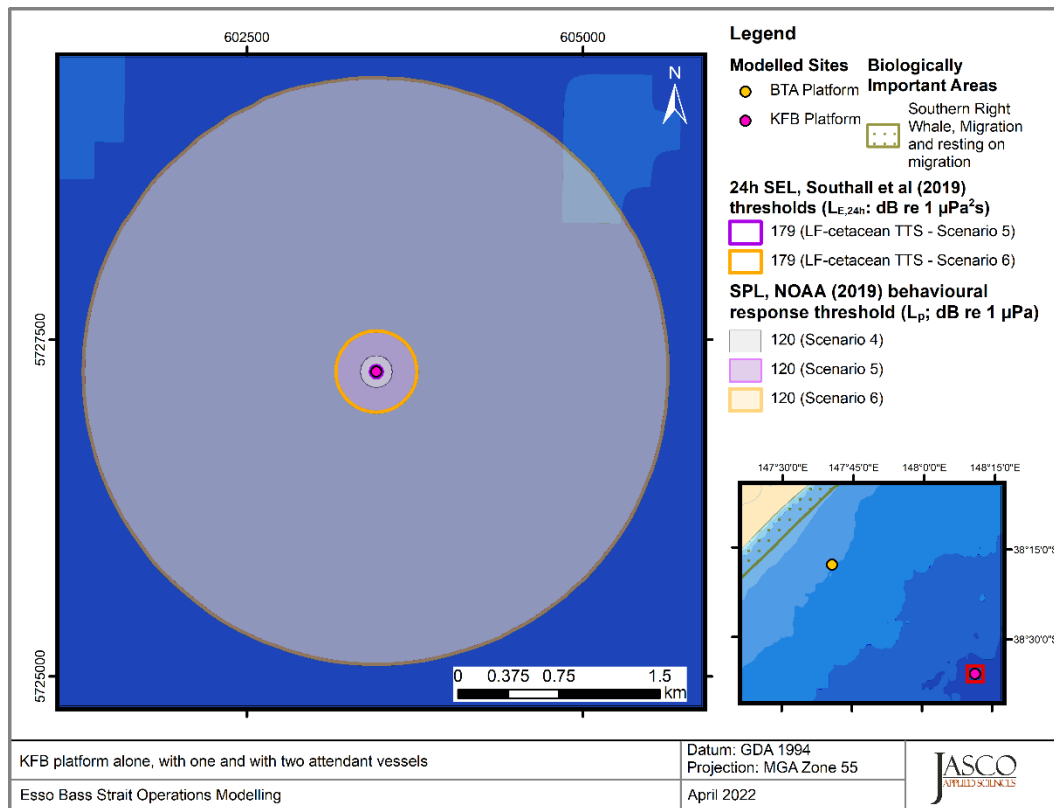


Figure 8. Scenarios 4 to 6: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

4.2. Supply Vessel and Platforms with Attendant Vessels with/without a Supply Vessel

Table 4. Scenarios 7 to 9: Distances (m) to permanent threshold shift (PTS), temporary threshold shift (TTS), and behavioural response of low-frequency cetaceans (LFC), high-frequency cetaceans (HFC), and other carnivores in water (OCW). Scenarios detailed in Table 1.

Effect thresholds			Scenario									
			7 (2 h)*		7 (24 h)*		8		9 (1 h)*		9 (2 h)*	
			$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}
Injury	LFC	PTS	-	-	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	-	-	70	70	300	330	300	330	300	330
	HFC	PTS	-	-	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	-	-	-	-	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]
	OCW	PTS	-	-	-	-	-	-	-	-	-	-
		TTS	-	-	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
Behavioural response			570	605	570	605	1460	1640	1685	1800	1685	1800

* During the accumulation period of 24 h, the supply vessel is operating for 1 or 2 h, the other structures are operating continuously.

† Distance from the centre of the platform, toward the attendant vessel permanently alongside, n/a in the other directions.

Table 5. Scenarios 10 to 12: Distances (m) to permanent threshold shift (PTS), temporary threshold shift (TTS), and behavioural response of low-frequency cetaceans (LFC), high-frequency cetaceans (HFC), and other carnivores in water (OCW). Scenarios detailed in Table 1.

Effect thresholds			Scenario									
			10 (2 h)*		10 (24 h)		11		12 (1 h)*		12 (2 h)*	
			$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}
Injury	LFC	PTS	-	-	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	20	20	85	85	350	375	350	380	350	380
	HFC	PTS	-	-	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	-	-	30	30	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]
	OCW	PTS	-	-	-	-	-	-	-	-	-	-
		TTS	-	-	-	-	60 [†]	60 [†]	-	-	-	-
Behavioural response			535	565	535	565	2420	2765	2725	2820	2725	2820

* During the accumulation period of 24 h, the supply vessel is operating for 1 or 2 h, the other structures are operating continuously.

† Distance from the centre of the platform, toward the attendant vessel permanently alongside, n/a in the other directions.

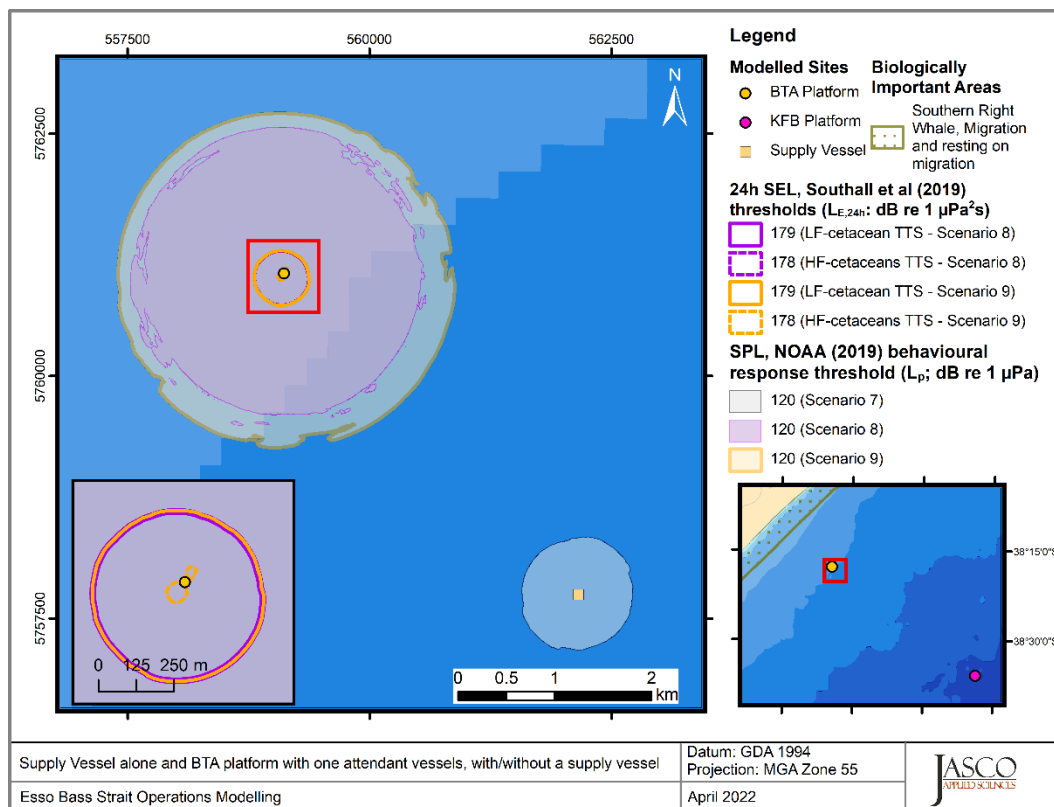


Figure 9. Scenarios 7 to 9: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

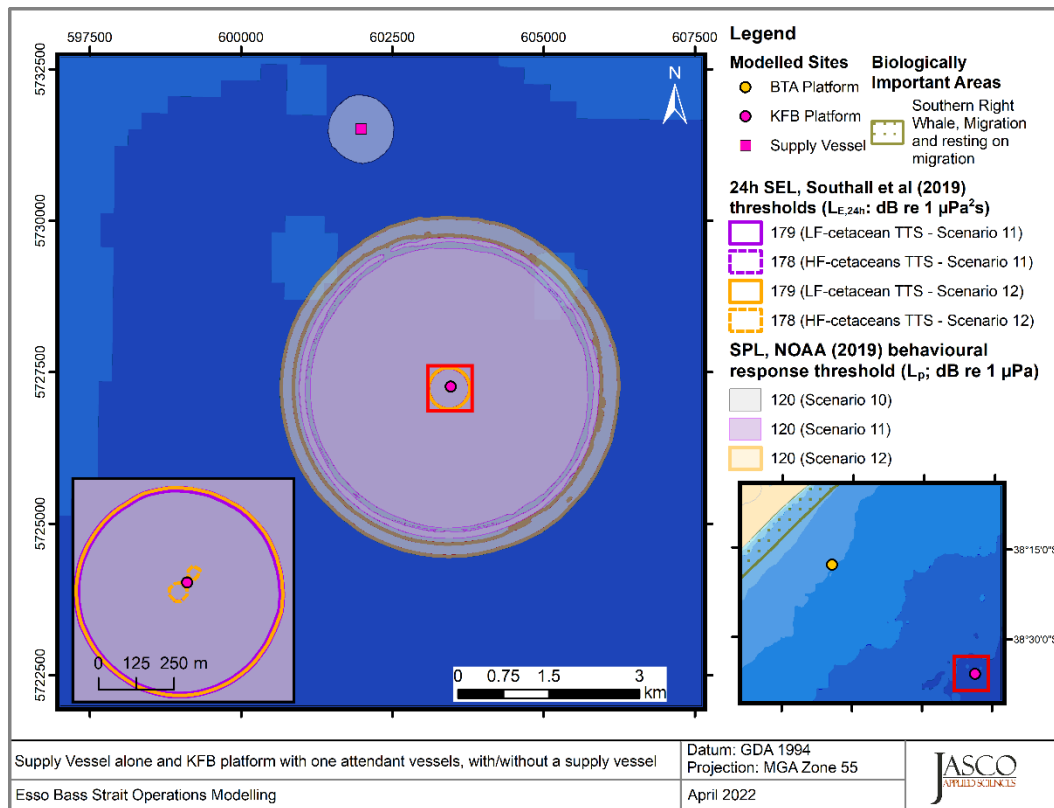


Figure 10. Scenarios 10 to 12: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

4.3. Generic Platform with/without an Attendant Vessel and Supply Vessels

Table 6. Scenarios 13 to 15: Distances (m) to permanent threshold shift (PTS), temporary threshold shift (TTS), and behavioural response of low-frequency cetaceans (LFC), high-frequency cetaceans (HFC), and other carnivores in water (OCW). Scenarios detailed in Table 1.

Effect thresholds			Scenario							
			13		14		15 (1 h)*		15 (2 h)*	
			$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}
Injury	LFC	PTS	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	-	-	400	435	400	435	400	435
	HFC	PTS	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
		TTS	-	-	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]	75 [†]
	OCW	PTS	-	-	-	-	-	-	-	-
		TTS	-	-	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]	60 [†]
Behavioural response			30	30	2485	2715	2725	3090	2725	3090

* During the accumulation period of 24 h, the supply vessel is operating for 1 or 2 h, the other structures are operating continuously.

† Distance from the centre of the platform, toward the attendant vessel permanently alongside, n/a in the other directions.

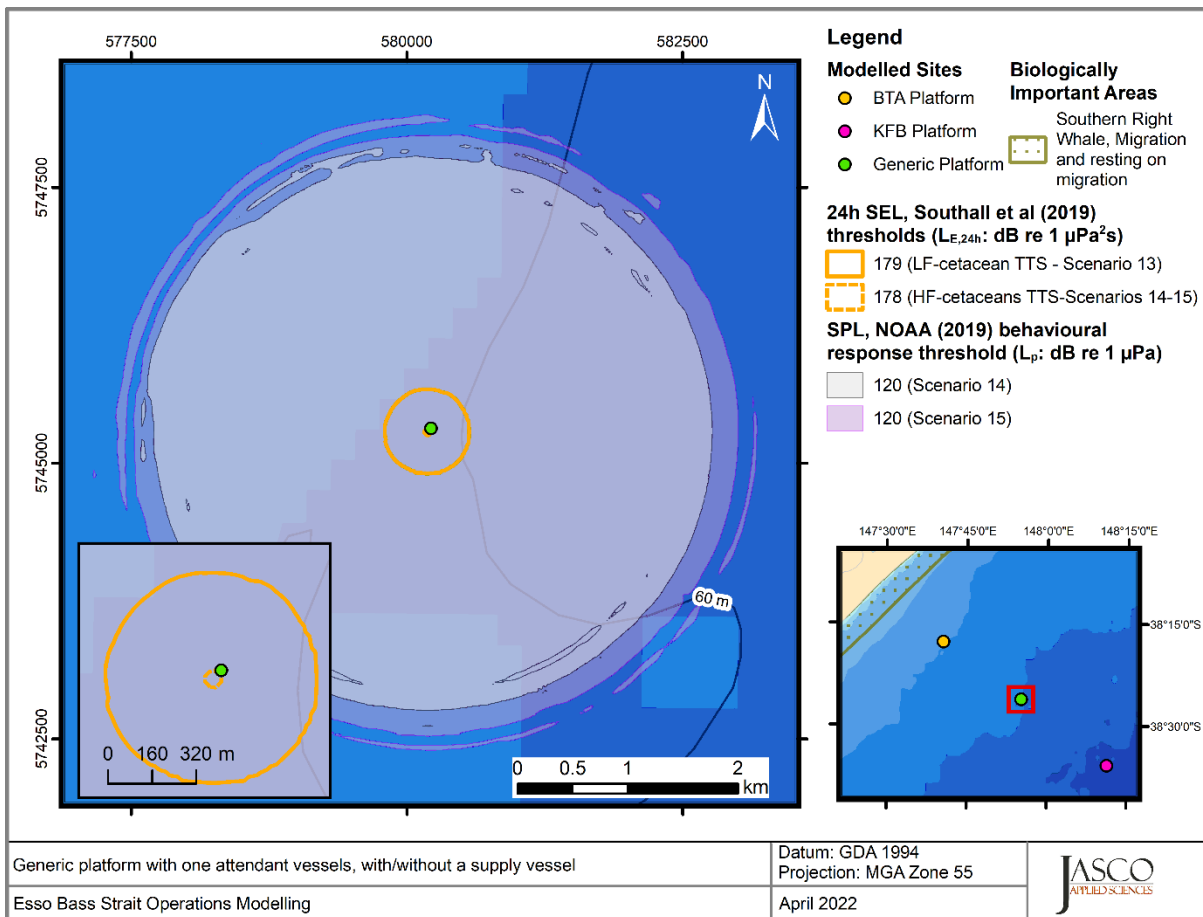


Figure 11. Scenarios 13 to 15: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

4.4. Jack-Up Drilling Rig and Supply Vessels

Table 7. Scenarios 16 and 17: Distances (m) to permanent threshold shift (PTS), temporary threshold shift (TTS), and behavioural response of low-frequency cetaceans (LFC), high-frequency cetaceans (HFC), and other carnivores in water (OCW). All distances are calculated from the centre of the platform. Scenarios detailed in Table 1.

Effect thresholds			Scenario					
			16		17 (2 h)*		17 (8 h)*	
			R _{95%}	R _{max}	R _{95%}	R _{max}	R _{95%}	R _{max}
Injury	LFC	PTS	-	-	-	-	-	-
		TTS	210	215	210	225	230	245
	HFC	PTS	-	-	-	-	-	-
		TTS	-	-	-	-	30	30
	OCW	PTS	-	-	-	-	-	-
		TTS	-	-	-	-	-	-
Behavioural response	Support vessel closest to the jack-up rig		4860	5510	5020	5620	5020	5620
	Support vessel farthest from the jack-up rig		6595	7660	6740	7935	6740	7935

* During the accumulation period of 24 h, the supply vessel is operating for 2 or 8 h, the other structures are operating continuously.

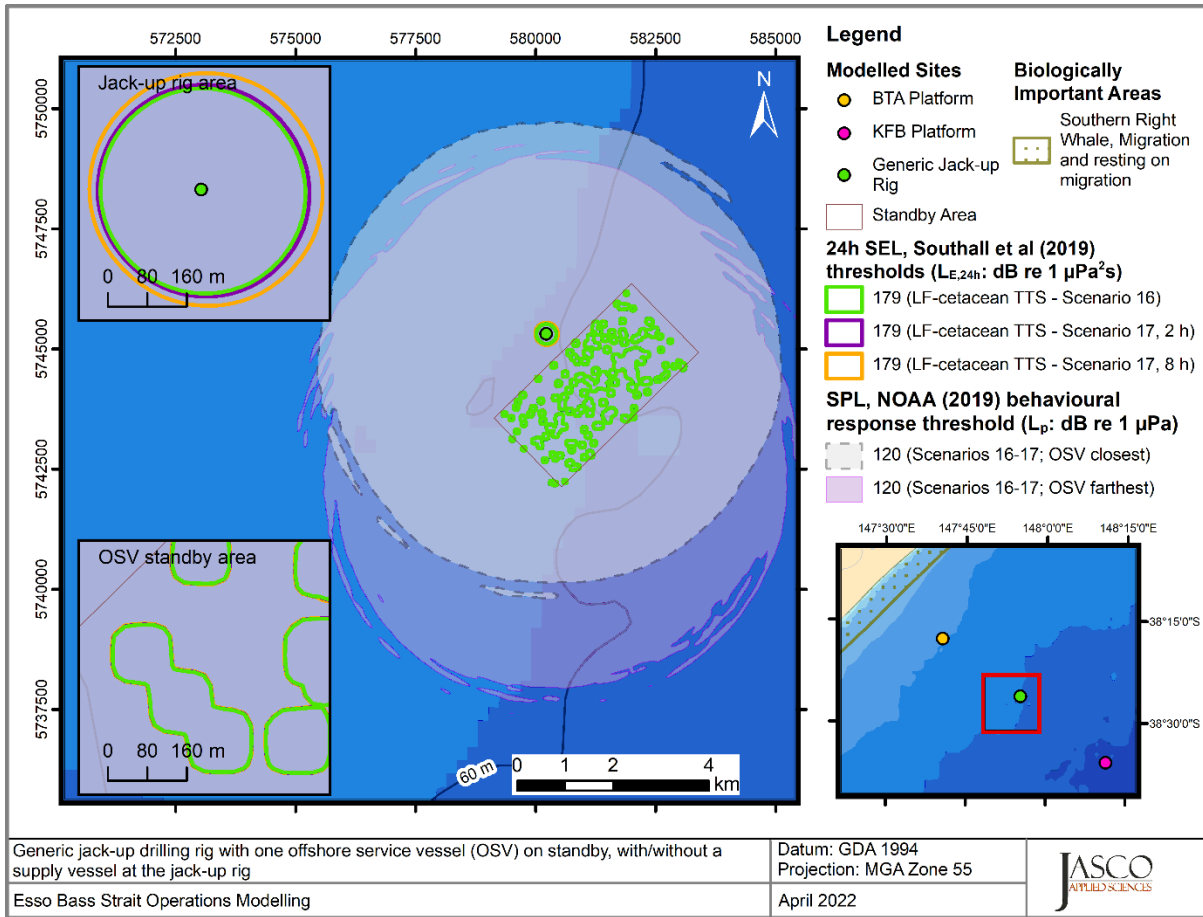


Figure 12. Scenarios 16 to 17: Sound level contour map showing isopleths to injury (frequency-weighted maximum-over-depth SEL 24 h) and behavioural response (unweighted maximum-over-depth SPL) thresholds. Scenarios detailed in Table 1.

5. Discussion and Conclusion

This modelling study predicted underwater sound levels associated with production platforms, a jack-up drilling rig and the associated attendant vessels. Maximum and 95th percentile distances (R_{max} and $R_{95\%}$) were computed to marine mammal PTS, TTS, and behavioural response thresholds. This section discusses the modelled results and the possible effects of simultaneous cutting operations.

For the purpose of discussing the possible effects of simultaneous cutting operations, the spectrum derived by McPherson and Koessler (2020) for a diamond wire saw operated via a remotely operated vehicle (ROV) is considered. This spectrum peaks at 10 kHz, with a broadband MSL of 161.4 dB re 1 μ Pa m.

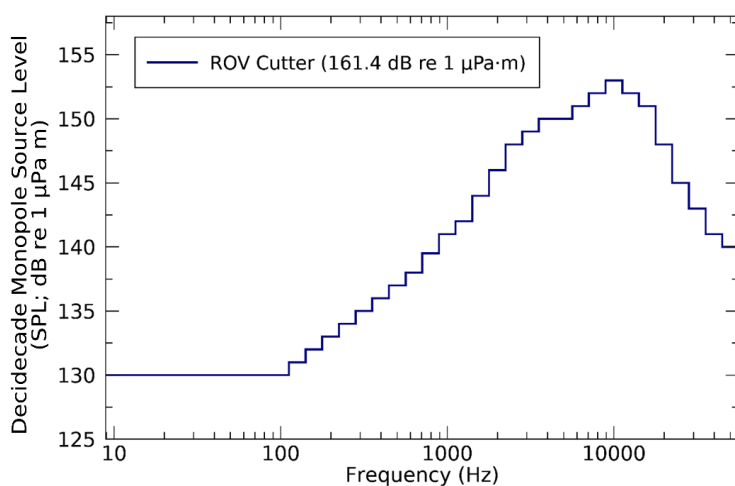


Figure 13. Monopole Source Level (MSL) spectra representing a diamond wire saw operated via a remotely operated vehicle (ROV cutter; McPherson and Koessler 2020).

5.1. BTA and KFB Platforms with One or Two Attendant Vessels

Further to the Noise Monitoring Study conducted in March-April 2021 (McPherson et al. 2022), distances to the pertinent sound level thresholds (listed in Section 2) were modelled for the BTA and KFB platforms on their own (Scenarios 1 and 4), with one attendant vessel (Scenarios 2 and 5) and with two attendant vessels (Scenarios 3 and 6). For these first six scenarios, listed in Table 1, the acoustic source levels were derived during the Noise Monitoring Study (McPherson et al. 2022).

Distances to marine mammal effect thresholds were modelled to further the Noise Monitoring Study conducted in March-April 2021 (McPherson et al. 2022). The results show that noise levels from production platforms in isolation do not result in levels high enough for potential injury, and the distances to behavioural response are relatively small (30 m at BTA; 115 m at KFB).

The presence of attendant vessels at the platforms, however, results in TTS exceedance close to the platform, with PTS not predicted. The distances to TTS thresholds are shorter at BTA (30 to 90 m for low-frequency cetaceans and ≤ 20 m for high-frequency cetaceans) than at KFB (45 to 300 m for low-frequency cetaceans and 20 to 30 m for high-frequency cetaceans). The distances to potential behavioural response increase significantly with the presence of attendant vessels, with distances of up to 2.1 km at the KFB platform with two attendant vessels.

If cutting operations were to happen at the BTA or KFB platforms, at least one vessel (operating the ROV) would be present near the platform. Based on the ROV cutter spectrum (Figure 13) and the spectra for the platforms with one and two attendant vessels (Figure 2; red and yellow lines), sound levels may increase at frequencies between approximately 3 and 20 kHz. Since MSL at low

frequencies (below a few 100 Hz) remain the dominant frequencies, distances to effect thresholds for low-frequency cetaceans are not expected to increase in a meaningful way. Distances to injury thresholds for high-frequency cetaceans, however, may increase slightly (likely by less than 100 m). Distances to behavioural response are not expected to increase significantly, with changes likely to be in the tens of metres.

5.1.1. Comparison with Modelling Results for the Seahorse/Tarwhine Plug and Abandonment Campaign

In September 2020, JASCO presented a modelling study of underwater sound levels associated with the Esso Seahorse/Tarwhine Plug and Abandonment (P and A) Campaign. In this study, the jack-up rig *Tom Prosser* was modelled under normal drilling operations (McPherson and Koessler 2020):

- Scenario 1: jack-up rig in isolation,
- Scenario 2: with a standby vessel 1 km from the platform,
- Scenario 3: with a standby vessel 1 km from the platform, a ROV vessel next to the platform, and ROV cutting tools under the platform
- Scenario 4: with a supply vessel next to the platform.

At the jack-up rig, the water depth was 41 m, similar to that at the BTA platform (44 m). Scenario 1 for the Seahorse/Tarwhine P and A Campaign is therefore comparable to Scenario 1 for the current study. Scenarios 2 and 3 for the Seahorse/Tarwhine P and A Campaign are not comparable to the scenarios in the current study since the standby vessel for the jack-up rig was assumed stationary at 1 km from the rig. The attendant vessel near the BTA platform was recorded when it was conducting resupply operations at the platform, therefore Scenario 4 for the Seahorse/Tarwhine P and A Campaign modelling can be compared to current Scenario 2 (BTA platform with one attendant vessel). Table 8 compared the distances to marine mammal effect thresholds modelled in the current study and for the Seahorse/Tarwhine P and A Campaign.

Table 8. Distances (m) to permanent threshold shift (PTS) and temporary threshold shift (TTS) of low-frequency cetaceans (LFC), and marine mammal behavioural response for the current study (BTA platform) and the Seahorse/Tarwhine P and A Campaign (Jack-up rig *Tom Prosser*; McPherson and Koessler 2020).

Effect thresholds			Scenario							
			BTA platform				Jack-up rig <i>Tom Prosser</i>			
			1		2		1		4	
			$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}	$R_{95\%}$	R_{max}
Injury	LFC	PTS	-	-	-	-	n/a	-	n/a	30
		TTS	-	-	30	30	n/a	30	n/a	550
Behavioural response			30	30	425	440	210	220	4510	3870

In general, the distance to the effect thresholds is greater for the jack-up rig than the BTA platform. This can be attributed to two main factors: the difference in the rig vs. platform MSL spectra, and the difference in the attendant vessel spectra.

The MSL spectrum derived from measurement for the BTA platform is different from the spectrum used in modelling the jack-up rig. The broadband MSL for the BTA platform was measured to be 150.6 dB re 1 μ Pa m, approximately 10 dB lower than for the jack-up rig *Tom Prosser* (160.4 dB re 1 μ Pa m), which was based on measurements of the jack-up rig *Endeavour* operating in Cook Inlet, Alaska (Illingworth and Rodkin Inc. 2014). The jack-up rig spectrum also presents peaks in the MSL

around 10, 63, and 300 Hz and between 3 and 7 kHz. The MSL spectrum for the BTA platform is relatively flat below 10 kHz, with maximum levels above 20 kHz. Since frequencies in different regimes (e.g., low- vs. high-frequency regimes) propagate differently (Jensen et al. 1994), these two spectra (compared in Figure 14) are expected to lead to different distances to the assessed marine mammal noise effect thresholds.

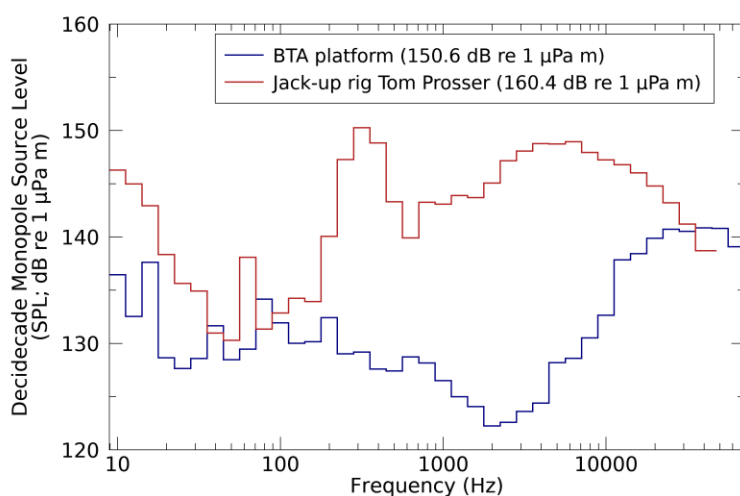


Figure 14. Monopole Source Level (MSL) spectra representing the BTA production platform in isolation (blue) and the jack-up rig *Tom Prosser* (red) modelled under normal drilling operations (McPherson and Koessler 2020).

In the Seahorse/Tarwhine P and A Campaign, because of the absence of vessel-specific operational data, the supply vessel was modelled using the specification of the *Skandi Feistein* at a conservative 45% maximum continuous rating (MCR) (defined by Esso), to adjust measurements of the dive support vessel *DSV Fu Lai* (MacGillivray 2006). This method leads to a broadband MSL of 177.6 dB re 1 μ Pa m. However, recordings of the *Skandi Feistein* at DP when stationary in isolation resulted in a broadband MSL of 171.9 dB re 1 μ Pa m (McPherson et al. 2022) and the recordings of the same vessel operation close (< 150 m) to the BTA platform (in combination with the platform) resulted in a broadband MSL of 171.0 dB re 1 μ Pa m. (The MCR level used by the *Skandi Feistein* operation close to the BTA platform was likely lower than while operating at DP away from the platform; the exact MCR is however unknown due to the record keeping intervals.) Although the difference in broadband MSL is approximately 6 dB, the MSL spectrum of the supply vessel (based on the *DSV Fu Lai*) presents much lower levels (by more than 10 dB) at frequencies below 100 Hz, and much higher levels (up to 15 dB) at frequencies above 100 Hz. Figure 15 presents the MSL spectrum for the BTA platform with one attendant vessel (the *Skandi Feistein*) derived from the Monitoring Study and used in Scenario 2 of the current modelling study; it is compared to the spectrum for the supply vessel used in Scenario 4 for the Seahorse/Tarwhine P and A Campaign.

The significant difference in decade MSL leads to much shorter distances to PTS, TTS, and behavioural response thresholds at the BTA platform than modelled in Scenario 4 for the Seahorse/Tarwhine P and A Campaign (compare Scenarios 2 and 4 in Table 8). This spectral difference is likely due to the supply vessel spectrum being based on that of the *DSV Fu Lai* (MacGillivray 2006), an older vessel than the *Skandi Feistein*, with not only bow and stern thrusters but also a pair of variable pitch propellers. Although the two vessels are similar in length, draft, and power used at DP, the measurement campaign has demonstrated that they have a different signature. The MCR statistics for the *Skandi Feistein* used during the monitoring study during resupply was not calculated, however the data shown in Figure 83 of McPherson et al. (2022) for radiated noise level (RNL) vs. engine power for *Skandi Feistein* at BTA indicates that none of the three motors driving the propellers used more than 120 kW of power each, and often less, therefore the total percentage of

MCR used was significantly less than the 45% considered for the Seahorse/Tarwhine P and A Campaign assessment.

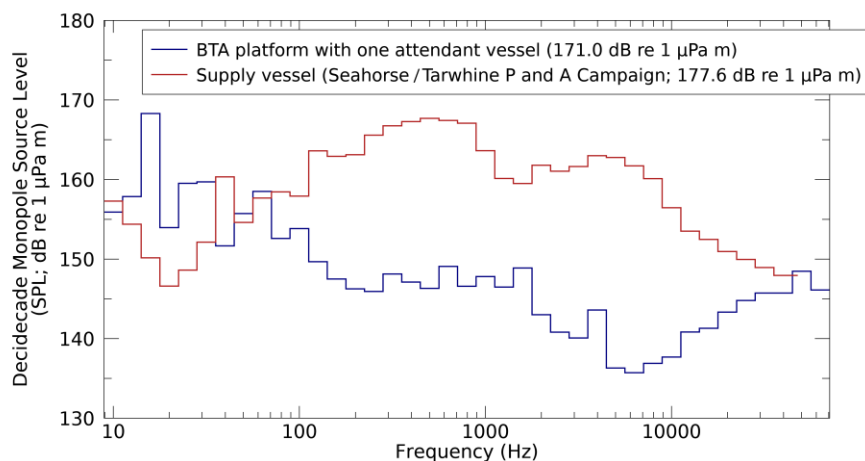


Figure 15. Monopole Source Level (MSL) spectra representing the BTA production platform with one attendant vessel (blue) and the supply vessel (red) modelled for the Seahorse/Tarwhine P and A Campaign (McPherson and Koessler 2020).

5.2. Supply Vessel and Platforms with One Attendant Vessel with/without a Supply Vessel

In Scenarios 7 and 10, the OSV, based on the measurements of the *Skandi Feistein*, was modelled stationary for 2 and 24 h. The results show that the potential for TTS to marine mammals is relatively low since the longest distance (85 m for TTS to low-frequency cetaceans near KFB) is similar to the length of the recorded vessel (87.9 m). The distance to behavioural response is more significant: on the order to 550 to 600 m, depending on the vessel's location.

Scenarios 8, 9, 11 and 12, representing the platforms with a MPSV permanently alongside, with and without an OSV present, result in the similar distances to potential TTS. This similarity shows that the presence of an OSV for a short period (up to 2 h) does not change significantly that sound field already produced by the BTA or KFB platforms with an MPSV permanently alongside. The presence of the OSV, however, increases the $R_{95\%}$ distances to the threshold for marine mammal behavioural response by up to 300 m (see Tables 4 and 5); this distance does not depend on the operational period.

Scenarios 8, 9, 11 and 12 results in longer distances to injury and behavioural response thresholds than scenarios 2, 3, 5 and 6 (BTA and KFB platform measured with one or two attendant vessels). This difference is caused by the vessels in Scenarios 8–12 being modelled alongside the platforms with MSL spectra derived from monitoring while at DP, in isolation to the platforms. As mentioned in Section 5.1.1, the MCR level used by the attendant vessel operating close to the BTA platform was likely lower than while operating at DP, away from the platform. Results for Scenarios 8, 9, 11 and 12 are therefore considered realistically conservative.

If cutting operations were occurring simultaneously, it is unlikely that the modelled distances to effect threshold would increase since the MPSV spectral levels (Figure 5) are higher than that of the ROV cutter (Figure 13).

5.3. Generic Platform with/without an Attendant Vessel and Supply Vessels

Scenarios 13 to 15 represent the operation of a generic production platform within the Esso Bass Strait field. Here, environmental parameters similar to those at the KFB platform were used, but the water was shallower (60 m, as opposed to 75 at the KFB platform).

The distances estimated for the generic platform in isolation are similar to those of the BTA platform in isolation: no potential for marine mammal PTS or TTS, and potential behavioural response up to 30 m from the platform. This similarity is due to reduction in MSL at low frequencies (< 80 Hz) compared to the KFB platform; these high MSL at KFB are likely due to tidally induced mooring flow noise (see Sections 3.1.1.1 and 3.1.1.2).

For Scenarios 14 and 15, the estimated distances to low-frequency cetacean TTS and marine mammal behavioural thresholds are similar, but slightly longer than those estimated for Scenarios 11 and 12, at the KFB station. This is caused by the combination of various sound propagation effects and to difference in water depth. Here again, the addition of an OSV for up to 2 h does not increase distances to PTS or TTS thresholds, and increases the distance to the behavioural response threshold by about 14% (300 m).

If cutting operations were occurring simultaneously, it is unlikely that the modelled distances to effect threshold would increase since the MPSV spectral levels (Figure 5) are higher than that of the ROV cutter (Figure 13).

5.4. Jack-up Drilling Rig and Supply Vessels

The last two scenarios in this study are related to a future drilling campaign and represent the drilling operations at the jack-up rig, including the presence of a support vessel standing by between 0.5-3.5 km from the rig; the last scenario adds a supply vessel alongside the rig for periods of 2 and 8 h.

The results show that distances to TTS are slightly larger around the rig (up to 245 m for low-frequency cetaceans) than around the vessel (up to 40 m for low-frequency cetaceans) assumed to be transiting at 4 knots within the standby box (see Figure 12). This distance does not change based on the location of the support vessel, and only slightly increases with the presence of the supply vessel (by up to 14% or 30 m).

The distance to behavioural response threshold increases slightly (by up to 3.2% or 160 m) with the presence of the supply vessel. The location of the support vessel, however, significantly increases this distance: by up to 41%, or 2.1 km (see Figure 12 and Table 7).

In comparison with the generic production platform, the jack-up rig's broadband MSL is significantly higher (22 dB) than that of the platform. Therefore, the distances to potential injury thresholds are longer for the jack-up rig (Scenario 16) than for the generic production platform (Scenario 13). The presence of the supply vessel has little influence on the distances at the jack-up rig because its MSL is comparable to that of the jack-up rig, and it is present for less than half the accumulation period. At the production platform, however, the MPSV, present in Scenarios 14 and 15, has higher MSL than the platform and it is present for the entire accumulation period (24 h). Its presence has therefore a significant influence on the distances to TTS.

Glossary

Unless otherwise stated in an entry, these definitions are consistent with ISO 80000-3 (2017).

1/3-octave

One third of an octave. *Note:* A one-third octave is approximately equal to one decidecade ($1/3 \text{ oct} \approx 1.003 \text{ ddec}$).

1/3-octave-band

Frequency band whose bandwidth is one one-third octave. *Note:* The bandwidth of a one-third octave-band increases with increasing centre frequency.

90 %-energy time window

The time interval over which the cumulative energy rises from 5 to 95 % of the total pulse energy. This interval contains 90 % of the total pulse energy. Symbol: T_{90} .

90 % sound pressure level (90 % SPL)

The sound pressure level calculated over the 90 %-energy time window of a pulse.

A-weighting

Frequency-selective weighting for human hearing in air that is derived from the inverse of the idealized 40-phon equal loudness hearing function across frequencies.

absorption

The reduction of acoustic pressure amplitude due to acoustic particle motion energy converting to heat in the propagation medium.

acoustic noise

Sound that interferes with an acoustic process.

acoustic self-noise

Sound at a receiver caused by the deployment, operation, or recovery of a specified receiver, and its associated platform.

ambient sound

Sound that would be present in the absence of a specified activity, usually a composite of sound from many sources near and far, e.g., shipping vessels, seismic activity, precipitation, sea ice movement, wave action, and biological activity.

attenuation

The gradual loss of acoustic energy from absorption and scattering as sound propagates through a medium.

auditory frequency weighting

The process of applying an auditory frequency weighting function. In human audiometry, C-weighting is the most commonly used function, an example for marine mammals are the auditory frequency weighting functions published by Southall et al. (2007).

auditory frequency weighting function

Frequency weighting function describing a compensatory approach accounting for a species' (or functional hearing group's) frequency-specific hearing sensitivity. Example hearing groups are low-, mid-, and high-frequency cetaceans, phocid and otariid pinnipeds.

azimuth

A horizontal angle relative to a reference direction, which is often magnetic north or the direction of travel. In navigation it is also called bearing.

background noise

Combination of ambient sound, acoustic self-noise, and sonar reverberation. Ambient sound detected, measured, or recorded with a signal is part of the background noise.

bandwidth

The range of frequencies over which a sound occurs. Broadband refers to a source that produces sound over a broad range of frequencies (e.g., seismic airguns, vessels) whereas narrowband sources produce sounds over a narrow frequency range (e.g., sonar) (ANSI S1.13-2005 (R2010)).

bar

Unit of pressure equal to 100 kPa, which is approximately equal to the atmospheric pressure on Earth at sea level. 1 bar is equal to 10^5 Pa or 10^{11} μ Pa.

broadband level

The total level measured over a specified frequency range.

cavitation

A rapid formation and collapse of vapor cavities (i.e., bubbles or voids) in water, most often caused by a rapid change in pressure. Fast-spinning vessel propellers typically cause cavitation, which creates a lot of noise.

cetacean

Any animal in the order Cetacea. These are aquatic species and include whales, dolphins, and porpoises.

compressional wave

A mechanical vibration wave in which the direction of particle motion is parallel to the direction of propagation. Also called primary wave or P-wave.

conductivity-temperature-depth (CTD)

Measurement data of the ocean's conductivity, temperature, and depth; used to compute sound speed and salinity.

continuous sound

A sound whose sound pressure level remains above ambient sound during the observation period. A sound that gradually varies in intensity with time, for example, sound from a marine vessel.

decade

Logarithmic frequency interval whose upper bound is ten times larger than its lower bound (ISO 80000-3:2006).

decidecade

One tenth of a decade. *Note:* An alternative name for decidecade (symbol ddec) is “one-tenth decade”. A decidecade is approximately equal to one third of an octave ($1 \text{ ddec} \approx 0.3322 \text{ oct}$) and for this reason is sometimes referred to as a “one-third octave”.

decidecade band

Frequency band whose bandwidth is one decidecade. *Note:* The bandwidth of a decidecade band increases with increasing centre frequency.

decibel (dB)

Unit of level used to express the ratio of one value of a power quantity to another on a logarithmic scale. Unit: dB.

ensonified

Exposed to sound.

far field

The zone where, to an observer, sound originating from an array of sources (or a spatially distributed source) appears to radiate from a single point.

Fourier transform (or Fourier synthesis)

A mathematical technique which, although it has varied applications, is referenced in the context of this report as a method used in the process of deriving a spectrum estimate from time-series data (or the reverse process, termed the inverse Fourier transform). A computationally efficient numerical algorithm for computing the Fourier transform is known as fast Fourier transform (FFT).

flat weighting

Term indicating that no frequency weighting function is applied. Synonymous with unweighted.

frequency

The rate of oscillation of a periodic function measured in cycles-per-unit-time. The reciprocal of the period. Unit: hertz (Hz). Symbol: f . 1 Hz is equal to 1 cycle per second.

frequency weighting

The process of applying a frequency weighting function.

frequency-weighting function

The squared magnitude of the sound pressure transfer function. For sound of a given frequency, the frequency weighting function is the ratio of output power to input power of a specified filter, sometimes expressed in decibels. Examples include the following:

- *Auditory frequency weighting function:* compensatory frequency weighting function accounting for a species' (or functional hearing group's) frequency-specific hearing sensitivity.
- *System frequency weighting function:* frequency weighting function describing the sensitivity of an acoustic acquisition system, typically consisting of a hydrophone, one or more amplifiers, and an analogue to digital converter.

geoacoustic

Relating to the acoustic properties of the seabed.

hearing group

Category of animal species when classified according to their hearing sensitivity and to the susceptibility to sound. Examples for marine mammals include very low-frequency (VLF) cetaceans, low-frequency (LF) cetaceans, mid-frequency (MF) cetaceans, high-frequency (HF) cetaceans, very high-frequency (VHF) cetaceans, otariid pinnipeds in water (OPW), phocid pinnipeds in water (PPW), sirenians (SI), other marine carnivores in air (OCA), and other marine carnivores in water (OCW) (NMFS 2018, Southall et al. 2019). See **auditory frequency weighting functions**, which are often applied to these groups. Examples for fish include species for which the swim bladder is involved in hearing, species for which the swim bladder is not involved in hearing, and species without a swim bladder (Popper et al. 2014).

hearing threshold

The sound pressure level for any frequency of the hearing group that is barely audible for a given individual for specified background noise during a specific percentage of experimental trials.

hertz (Hz)

A unit of frequency defined as one cycle per second.

high-frequency (HF) cetacean

See **hearing group**.

intermittent sound

A sound whose level abruptly drops below the background noise level several times during an observation period.

impulsive sound

Qualitative term meaning sounds that are typically transient, brief (less than 1 s), broadband, with rapid rise time and rapid decay. They can occur in repetition or as a single event. Examples of impulsive sound sources include explosives, seismic airguns, and impact pile drivers.

isopleth

A line drawn on a map through all points having the same value of some quantity.

knot

One nautical mile per hour. Symbol: kn.

level

A measure of a quantity expressed as the logarithm of the ratio of the quantity to a specified reference value of that quantity. Examples include sound pressure level, sound exposure level, and peak sound pressure level. For example, a value of sound exposure level with reference to $1 \mu\text{Pa}^2 \text{ s}$ can be written in the form $x \text{ dB re } 1 \mu\text{Pa}^2 \text{ s}$.

low-frequency (LF) cetacean

See **hearing group**.

masking

Obscuring of sounds of interest by sounds at similar frequencies.

median

The 50th percentile of a statistical distribution.

mid-frequency (MF) cetacean

See **hearing group**.

monopole source level (MSL)

A source level that has been calculated using an acoustic model that accounts for the effect of the sea-surface and seabed on sound propagation, assuming a point-like (monopole) sound source. Also see **radiated noise level**.

M-weighting

See **auditory frequency weighting function** (as proposed by Southall et al. 2007).

mysticete

A suborder of cetaceans that use baleen plates to filter food from water. Members of this group include rorquals (Balaenopteridae), right whales (Balaenidae), and grey whales (*Eschrichtius robustus*).

non-impulsive sound

Sound that is not an impulsive sound. A non-impulsive sound is not necessarily a continuous sound.

octave

The interval between a sound and another sound with double or half the frequency. For example, one octave above 200 Hz is 400 Hz, and one octave below 200 Hz is 100 Hz.

odontocete

The presence of teeth, rather than baleen, characterizes these whales. Members of the Odontoceti are a suborder of cetaceans, a group comprised of whales, dolphins, and porpoises. The skulls of toothed whales are mostly asymmetric, an adaptation for their echolocation. This group includes sperm whales, killer whales, beluga whales, narwhals, dolphins, and porpoises.

otariid

A common term used to describe members of the Otariidae, eared seals, commonly called sea lions and fur seals. Otariids are adapted to a semi-aquatic life; they use their large fore flippers for propulsion. Their ears distinguish them from phocids. Otariids are one of the three main groups in the superfamily Pinnipedia; the other two groups are phocids and walrus.

other marine carnivores in air (OCA)

See **hearing group**.

other marine carnivores in water (OCW)

See **hearing group**.

parabolic equation method

A computationally efficient solution to the acoustic wave equation that is used to model propagation loss. The parabolic equation approximation omits effects of back-scattered sound, simplifying the computation of propagation loss. The effect of back-scattered sound is negligible for most ocean-acoustic propagation problems.

peak sound pressure level (zero-to-peak sound pressure level)

The level ($L_{p,pk}$ or L_{pk}) of the squared maximum magnitude of the sound pressure (p_{pk}^2).

Unit: decibel (dB). Reference value (p_0^2) for sound in water: $1 \mu\text{Pa}^2$.

$$L_{p,pk} = 10 \log_{10}(p_{pk}^2/p_0^2) \text{ dB} = 20 \log_{10}(p_{pk}/p_0) \text{ dB}$$

The frequency band and time window should be specified. Abbreviation: PK or Lpk.

peak-to-peak sound pressure

The difference between the maximum and minimum sound pressure over a specified frequency band and time window. Unit: pascal (Pa).

permanent threshold shift (PTS)

An irreversible loss of hearing sensitivity caused by excessive noise exposure. PTS is considered auditory injury.

phocid

A common term used to describe all members of the family Phocidae. These true/earless seals are more adapted to in-water life than are otariids, which have more terrestrial adaptations. Phocids use their hind flippers to propel themselves. Phocids are one of the three main groups in the superfamily Pinnipedia; the other two groups are otariids and walrus.

point source

A source that radiates sound as if from a single point.

pressure, acoustic

The deviation from the ambient pressure caused by a sound wave. Also called sound pressure.

Unit: pascal (Pa).

pressure, hydrostatic

The pressure at any given depth in a static liquid that is the result of the weight of the liquid acting on a unit area at that depth, plus any pressure acting on the surface of the liquid. Unit: pascal (Pa).

propagation loss (PL)

Difference between a source level (SL) and the level at a specified location, $PL(x) = SL - L(x)$. Also see **transmission loss**.

radiated noise level (RNL)

A source level that has been calculated assuming sound pressure decays geometrically with distance from the source, with no influence of the sea-surface and seabed. Also see **monopole source level**.

received level

The level measured (or that would be measured) at a defined location. The type of level should be specified.

reference values

standard underwater references values used for calculating sound **levels**, e.g., the reference value for expressing sound pressure level in decibels is 1 μPa .

Quantity	Reference value
Sound pressure	1 μPa
Sound exposure	1 $\mu\text{Pa}^2 \text{ s}$
Sound particle displacement	1 μm
Sound particle velocity	1 nm/s
Sound particle acceleration	1 $\mu\text{m/s}^2$

rms

abbreviation for root-mean-square.

shear wave

A mechanical vibration wave in which the direction of particle motion is perpendicular to the direction of propagation. Also called a secondary wave or S-wave. Shear waves propagate only in solid media, such as sediments or rock. Shear waves in the seabed can be converted to compressional waves in water at the water-seabed interface.

sensation level

Difference between the sound pressure level and hearing threshold at a specified frequency. Unit: decibel (dB).

sound

A time-varying disturbance in the pressure, stress, or material displacement of a medium propagated by local compression and expansion of the medium.

sound exposure

Time integral of squared sound pressure over a stated time interval. The time interval can be a specified time duration (e.g., 24 h) or from start to end of a specified event (e.g., a pile strike, an airgun pulse, a construction operation). Unit: $\text{Pa}^2 \text{ s}$.

sound exposure level

The level (L_E) of the sound exposure (E). Unit: decibel (dB). Reference value (E_0) for sound in water: 1 $\mu\text{Pa}^2 \text{ s}$.

$$L_E := 10 \log_{10}(E/E_0) \text{ dB} = 20 \log_{10}(E^{1/2}/E_0^{1/2}) \text{ dB}$$

The frequency band and integration time should be specified. Abbreviation: SEL.

sound exposure spectral density

Distribution as a function of frequency of the time-integrated squared sound pressure per unit bandwidth of a sound having a continuous spectrum. Unit: $\text{Pa}^2 \text{ s/Hz}$.

sound field

Region containing sound waves.

sound intensity

Product of the sound pressure and the sound particle velocity. The magnitude of the sound intensity is the sound energy flowing through a unit area perpendicular to the direction of propagation per unit time.

sound pressure

The contribution to total pressure caused by the action of sound.

sound pressure level (rms sound pressure level)

The level ($L_{p,rms}$) of the time-mean-square sound pressure (p_{rms}^2). Unit: decibel (dB). Reference value (p_0^2) for sound in water: $1 \mu\text{Pa}^2$.

$$L_{p,rms} := 10 \log_{10}(p_{rms}^2/p_0^2) \text{ dB} = 20 \log_{10}(p_{rms}/p_0) \text{ dB}$$

The frequency band and averaging time should be specified. Abbreviation: SPL or Lrms.

sound speed profile

The speed of sound in the water column as a function of depth below the water surface.

soundscape

The characterization of the ambient sound in terms of its spatial, temporal, and frequency attributes, and the types of sources contributing to the sound field.

source level (SL)

A property of a sound source obtained by adding to the sound pressure level measured in the far field the propagation loss from the acoustic centre of the source to the receiver position. Unit: decibel (dB). Reference value: $1 \mu\text{Pa}^2\text{m}^2$.

spectrogram

A visual representation of acoustic amplitude compared with time and frequency.

spectrum

An acoustic signal represented in terms of its power, energy, mean-square sound pressure, or sound exposure distribution with frequency.

surface duct

The upper portion of a water column within which the sound speed profile gradient causes sound to refract upward and therefore reflect off the surface resulting in relatively long-range sound propagation with little loss.

temporary threshold shift (TTS)

Reversible loss of hearing sensitivity. TTS can be caused by noise exposure.

thermocline

The depth interval near the ocean surface that experiences temperature gradients due to warming or cooling by heat conduction from the atmosphere and by warming from solar heating.

transmission loss (TL)

The difference between a specified level at one location and that at a different location, $TL(x1,x2) = L(x1) - L(x2)$. Also see **propagation loss**.

unweighted

Term indicating that no frequency weighting function is applied. Synonymous with flat weighting.

very high-frequency (VHF) cetacean

See **hearing group**.

very low-frequency (VLF) cetacean

See **hearing group**.

wavelength

Distance over which a wave completes one cycle of oscillation. Unit: metre (m). Symbol: λ .

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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 $p_0 = 1 \mu\text{Pa}$. 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 $1 \mu\text{Pa}$) 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:

$$L_p = 10 \log_{10} \left(\frac{1}{T} \int_T g(t) p^2(t) dt / p_0^2 \right) \text{ dB} \quad (\text{A-1})$$

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 LE; dB re $1 \mu\text{Pa}^2\text{-s}$) is the time-integral of the squared acoustic pressure over a duration (T):

$$L_E = 10 \log_{10} \left(\int_T p^2(t) dt / T_0 p_0^2 \right) \text{ dB} \quad (\text{A-2})$$

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:

$$L_{E,N} = 10 \log_{10} \left(\sum_{i=1}^N 10^{\frac{L_{E,i}}{10}} \right) \text{ dB} . \quad (\text{A-3})$$

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 A.4). 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 i th 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 i th 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 ($f_c(10) = 10 \text{ Hz}$) to band 44 ($f_c(44) = 25 \text{ kHz}$).

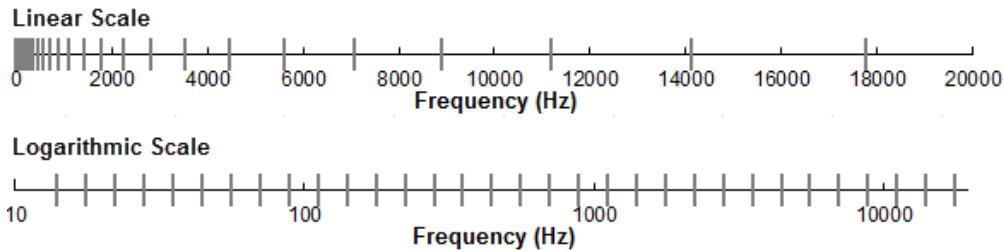


Figure A-1. Decidecade frequency bands (vertical lines) shown on a linear frequency scale and a logarithmic scale.

The sound pressure level in the i th band ($L_{p,i}$) is computed from the spectrum $S(f)$ between $f_{lo,i}$ and $f_{hi,i}$:

$$L_{p,i} = 10 \log_{10} \int_{f_{lo,i}}^{f_{hi,i}} S(f) df \text{ dB} \tag{A-6}$$

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.

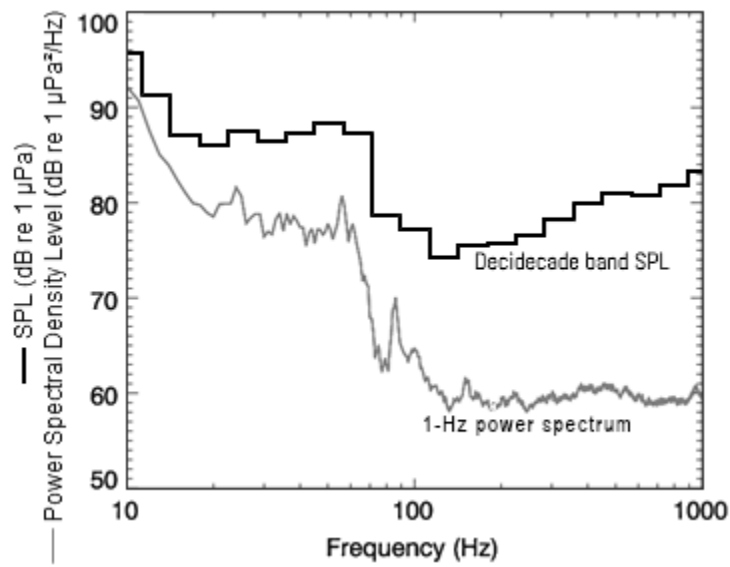


Figure A-2. Sound pressure spectral density levels and the corresponding decidecade band sound pressure levels of example ambient noise shown on a logarithmic frequency scale. Because the decidecade bands are wider with increasing frequency, the decidecade band SPL is higher than the power spectrum.

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 beluga whales 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 $\mu\text{Pa}^2\cdot\text{s}$. 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 $\mu\text{Pa}^2\cdot\text{s}$.

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 (2012). The latest revision to this work was published in 2018 (NMFS 2018). Southall et al. (2019) revisited the interim criteria published in 2007. All noise exposure criteria in NMFS (2018) and Southall et al. (2019) are identical (for impulsive and non-impulsive sounds); however, the mid-frequency cetaceans from NMFS (2018) are classified as high-frequency cetaceans in Southall et al.

(2019), and high-frequency cetaceans from NMFS (2018) are classified as very-high-frequency cetaceans in Southall et al. (2019).

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 step function (all-or-none) threshold of 120 dB re 1 μ Pa SPL (unweighted) for non-impulsive sounds to assess and regulate noise-induced behavioural impacts on marine mammals (NOAA 2019). The 120 dB re 1 μ Pa 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 μ Pa (SPL), possible avoidance occurred for exposure levels approaching 119 dB re 1 μ Pa. 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 Southall (2019). The updates did not affect the content related to either the definitions of frequency-weighting

functions or the threshold values. 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 Southall et al. (2019).

Hearing group	<i>a</i>	<i>b</i>	<i>f_{lo}</i> (Hz)	<i>f_{hi}</i> (kHz)	<i>K</i> (dB)
Low-frequency cetaceans (baleen whales)	1.0	2	200	19,000	0.13
High-frequency cetaceans (most dolphins, plus sperm, beaked, and bottlenose whales)	1.6	2	8,800	110,000	1.20
Other marine carnivores (including otariids) in water	2	2	940	25,000	0.64

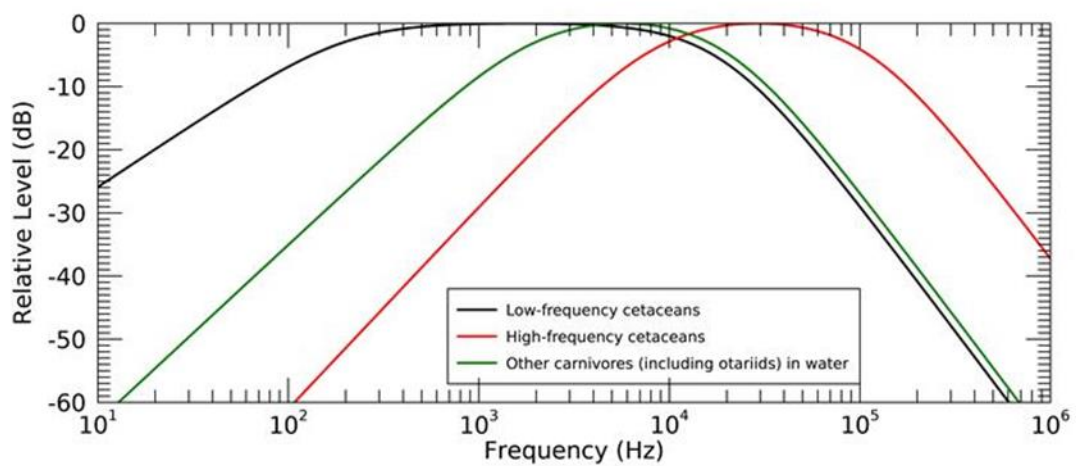


Figure A-3. Auditory weighting functions for functional marine mammal hearing groups used in this project as recommended by Southall et al. (2019).

Appendix B. Methods and Parameters

B.1. Environmental Parameters

B.1.1. Bathymetry

Bathymetry throughout the modelled area was client supplied and supplemented with bathymetry data extracted from the Australian Bathymetry and Topography Grid, a 9 arc-second grid rendered for Australian waters (Whiteway 2009). The bathymetry data were re-gridded and combined onto a Map Grid of Australia (MGA) coordinate projection (Zone 50) with a regular grid spacing of 250 m × 250 m (Figure B-1).

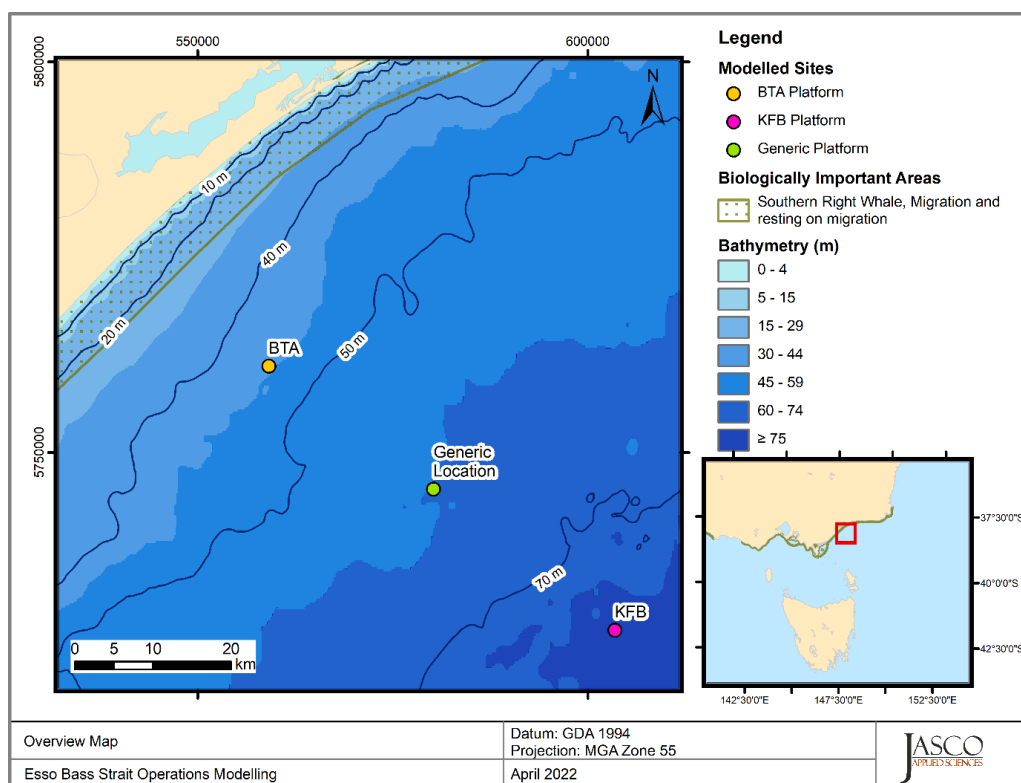


Figure B-1. Bathymetry in the modelled area.

B.1.2. Sound Speed Profile

The mean daily sound speed profiles were derived from the Global Ice Ocean Prediction System (GIOPS) forecasting system for the period when the monitoring program occurred (March 2021 to April 2021 inclusive; McPherson et al. 2022). A median profile determined to best represent potential propagation conditions over the period at each production platform. The GIOPS is a data assimilation system that combines satellite and in-situ measurements for ice and ocean analyses and forecasts. For oceanographic variables, GIOPS assimilates a variety of satellite and in-situ observations (Argos profiling floats, ice buoys, moorings, ship observations, and others) to provide a 3-d representation of ocean temperature and salinity, water velocity, sea surface height and mixed layer depth.

For longer-range sound propagation modelling, the profiles were extended using the sound speed profile in the area was derived from temperature and salinity profiles from the US 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 US 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).

Figure B-2 shows the profiles used as input to the sound propagation modelling at the BTA and KFB platforms. The same profiles were used for all scenarios; the profile at the KFB platform was also used for modelling at the generic production platform and the jack-up rig because it is the profile most favourable to long-range propagation.

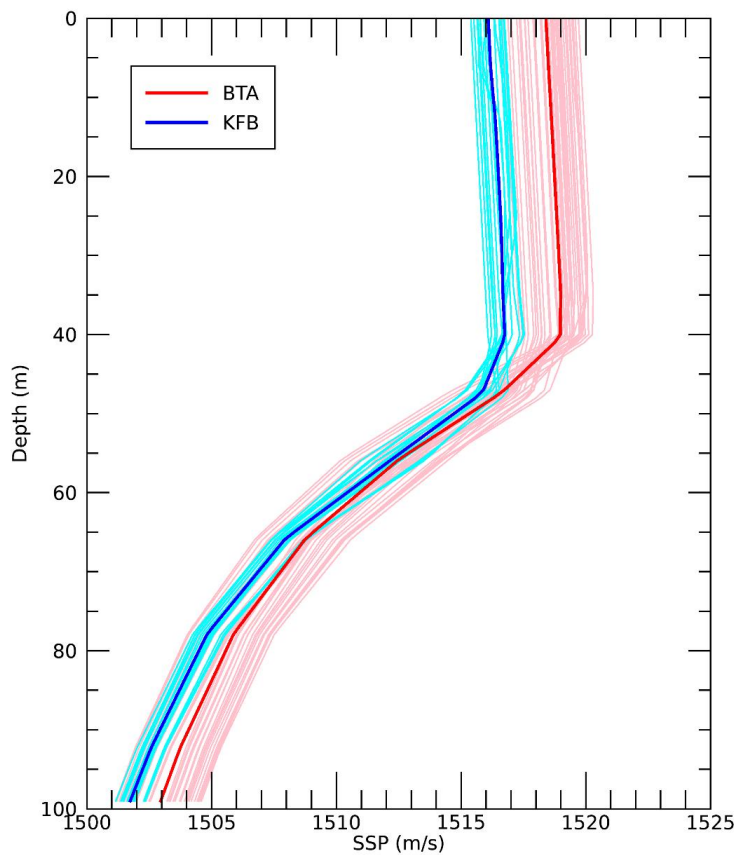


Figure B-2. The sound speed profiles used for modelling: The daily and median profiles for the first 100 m from Global Ice Ocean Prediction System (GIOPS) [Geoacoustics](#).

The geoacoustic profile determines how energy is reflected from the seabed, as well as how it is transmitted and absorbed into the sediment layers. The geoacoustic profiles representing the seabed near the BTA and KFB platforms were derived in the monitoring program (McPherson et al. 2022); they are presented in Tables B-1 and B-2. The geoacoustic profile at the KFB platform was also used to represent the seabed at the generic platform and jack-up rig location, because it is the profile most favourable to long-range propagation.

Table B-1. Geoacoustic profile at the BTA platform. Each parameter varies linearly within the stated range.

Depth below seafloor (m)	Material	Density (g/cm ³)	Compressional wave		Shear wave	
			Speed (m/s)	Attenuation (dB/λ)	Speed (m/s)	Attenuation (dB/λ)
0–5	Medium Sand	2.01–2.02	1720–1840	0.21–0.22	400	3.65
5–10		2.02	1840–1910	0.22–0.23		
10–20		2.02–2.03	1910–2010	0.23–0.24		
20–50		2.03–2.05	2010–2200	0.24–0.26		
50–1000	Limestone (semi-cemented calcarenite)	2.05	2200	0.26		
> 1000	Basement (rock)	3.0	3800	0.38		

Table B-2. Geoacoustic profile at the KFB platform. Each parameter varies linearly within the stated range.

Depth below seafloor (m)	Predicted lithology	Density (g/cm ³)	Compressional wave		Shear wave	
			Speed (m/s)	Attenuation (dB/λ)	Speed (m/s)	Attenuation (dB/λ)
0–25	Very fine sand	2.0	1727.8–1819.5	0.570–0.900	250	3.65
25–100	Silt	1.97	1780.0–1909.1	0.851–1.217		

B.2. Sound Propagation Models

B.2.1. 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 μPa²·s m², 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 μPa²·s by:

$$RL = SL - PL. \quad (B-1)$$

B.2.2. 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 $N \times 2$ -D. These vertical radial planes are separated by an angular step size of $\Delta\theta$, yielding $N = 360^\circ/\Delta\theta$ number of planes (Figure B-3).

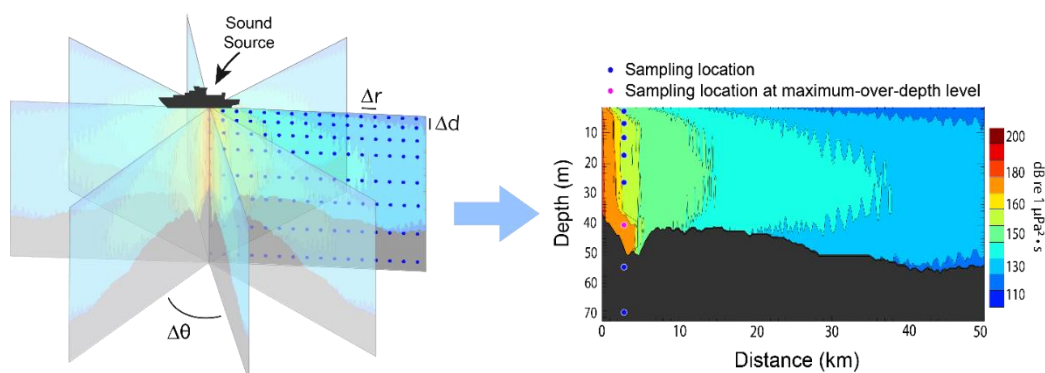


Figure B-3. The $N \times 2$ -D and maximum-over-depth modelling approach used by MONM.

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-pulse or 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. 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-4).

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-4(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-4(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.

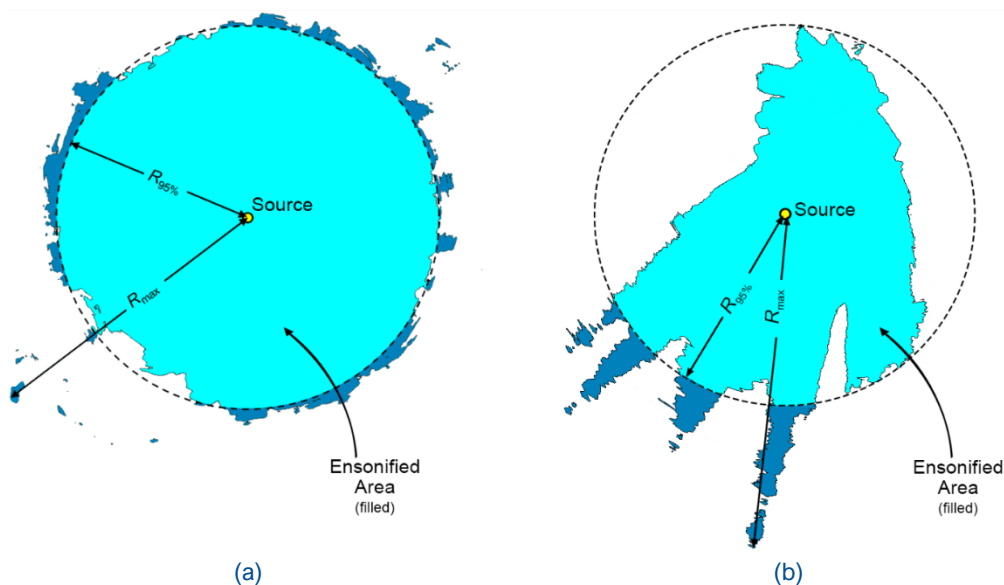


Figure B-4. Sample areas ensonified to an arbitrary sound level with R_{\max} and $R_{95\%}$ ranges shown for two different scenarios. (a) Largely symmetric sound level contour with small protrusions. (b) Strongly asymmetric sound level contour with long protrusions. Light blue indicates the ensonified areas bounded by $R_{95\%}$; darker blue indicates the areas outside this boundary which determine R_{\max} .

B.4. 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 Arctic, Canadian and southern United States waters, Greenland, Russia and Australia (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).

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).

Appendix K: Conductor Driving Sound Modelling report

ExxonMobil Marlin B Conductor Piling

Acoustic Modelling for Assessing Marine Fauna Sound Exposures

JASCO Applied Sciences (Australia) Pty Ltd

21 August 2023

Submitted to:

Pepper Sheppard

ExxonMobil

Contract: 4501789511

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The results presented herein are relevant within the specific context described in this report. They could be misinterpreted if not considered in the light of all the information contained in this report. Accordingly, if information from this report is used in documents released to the public or to regulatory bodies, such documents must clearly cite the original report, which shall be made readily available to the recipients in integral and unedited form.

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Executive Summary

JASCO Applied Sciences (JASCO) performed a modelling study of underwater sound levels associated with the impact piling of a conductor casing at the Marlin B platform.

The study predicted ranges to acoustic thresholds that may result in injury to or behavioural disturbance of marine fauna. The fauna considered included marine mammals, sea turtles, fish including fish larvae and eggs, and invertebrates. The corresponding thresholds used in this study represented the best available science for behavioural response or disturbance, temporary threshold shift (TTS), and permanent threshold shift (PTS) or injury depending upon the fauna group.

This modelling study characterised the sound from impact piling and determined how it may propagate into the wider environment. The modelling considered dynamics of impact pile driving and range-dependent environmental properties. It was assumed that the piling activities could be performed at any time during the year, therefore the conservative criteria were employed when selecting the season for the modelling scenario.

Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p); zero-to-peak pressure levels (PK, L_{pk}); and either single-strike (i.e., per-strike) or accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria and noise sources. In this report, the assessment period for SEL accumulation is defined as a 24-hour period over which sound energy may be integrated; the level is specified with the abbreviation SEL_{24h} .

SEL_{24h} is a cumulative metric that reflects the dosimetric effect of noise levels within 24 hours, based on the assumption that a receiver (e.g., an animal) is consistently exposed to such noise levels at a fixed position. More realistically, marine animals would not stay in the same location for 24 hours (especially in the absence of location-specific habitat) but rather a shorter period, depending on the animal's behaviour and the source's proximity and movements. Therefore, a reported radius for the SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the source will be impaired, but rather that an animal could be exposed to the sound level associated with impairment (either PTS or TTS) if it remained at that location for 24 hours.

A summary of the acoustic modelling results for piling operations are included below.

Marine mammals

- The maximum distance where the NOAA (2019) marine mammal behavioural response criterion of 160 dB re 1 μ Pa (SPL) for impulsive noise could be exceeded varied between 0.31 and 0.45 km, depending on modelled penetration depth.
- The results for marine mammal injury considered the criteria from Southall et al. (2019). These criteria contain two metrics (PK and SEL_{24h}), both required for the assessment of marine mammal PTS and TTS. The longest distance associated with either metric is required to be applied for assessment; Table 1 summarises the maximum distances, along with the relevant metric.
- The distance to PTS and TTS was always furthest in the broadside direction; distances are shown in Table 1.

Table 1. Summary of maximum (R_{max}) horizontal distances (in km) from Marlin B platform to behavioural response thresholds and temporary threshold shift (TTS) and permanent threshold shift (PTS) for marine mammals showing the relevant metric.

Hearing group	Maximum modelled distance to effect threshold (R_{max})		
	Behavioural response ¹	Impairment (km): TTS ²	Impairment (km): PTS ²
LF cetaceans	0.45	2.93 (SEL _{24h})	0.67 (SEL _{24h})
HF cetaceans		–	–
VHF cetaceans		1.02 (SEL _{24h})	0.08 (SEL _{24h})

Noise exposure criteria: ¹ NOAA (2019) and ² Southall et al. (2019).

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

Sea turtles

- The PK sea turtle injury criteria of 232 dB re 1 μ Pa for PTS and 226 dB re 1 μ Pa for TTS from Finneran et al. (2017) was not predicted to occur.
- The maximum distance to the SEL_{24h} metrics for PTS and TTS onset were not predicted to occur (Finneran et al. 2017). As is the case with marine mammals, a reported radius for SEL_{24h} criteria does not mean that sea turtles travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with either PTS or TTS if it remained in that location for 24 hours.
- Table 2 summarises the distances to where the criterion for behavioural response of turtles to 166 dB re 1 μ Pa (SPL) and the 175 dB re 1 μ Pa (SPL) threshold (McCauley et al. 2000) for behavioural disturbance could be exceeded.

Table 2. Summary of horizontal distances (in km) to turtle behavioural response criteria, temporary threshold shift (TTS), and permanent threshold shift (PTS).

Hearing group	Maximum modelled distance to effect threshold (R_{max})			
	Behavioural response ¹	Behavioural disturbance ²	Impairment: TTS ³	Impairment: PTS ³
Sea Turtles	0.15	–	–	–

Noise exposure criteria: ^{1,2} (McCauley et al. 2000), and ³ Finneran et al. (2017)

Fish, fish eggs, and fish larvae

- This modelling study assessed the ranges for quantitative criteria based on Popper et al. (2014) and considered both PK and SEL_{24h} metrics associated with mortality and potential mortal injury as well as impairment in the following groups:
 - Fish without a swim bladder (also appropriate for sharks in the absence of other information),
 - Fish with a swim bladder that do not use it for hearing,
 - Fish that use their swim bladders for hearing,
 - Fish eggs and fish larvae.
- Table 3 summarises distances to effect criteria for fish, fish eggs, and fish larvae along with the relevant metric. Seafloor sound levels were assessed within the water column.

Table 3. Summary of maximum fish, fish eggs, and larvae injury and temporary threshold shift (TTS) onset distances for single impulse and 24 hour sound exposure level (SEL_{24h}) modelled scenarios.

Relevant hearing group	Effect criteria	Water column	
		Metric associated with longest distance to criteria	R _{max} (km)
Fish: No swim bladder	Recoverable injury	SEL _{24h} or PK	–
	TTS	SEL _{24h}	0.63
Fish: Swim bladder not involved in hearing and Swim bladder involved in hearing	Recoverable injury	SEL _{24h} or PK	–
	TTS	SEL _{24h}	0.63
Fish eggs, and larvae (relevant to plankton)	Injury	SEL _{24h} or PK	–

1. Introduction

JASCO Applied Sciences (JASCO) performed a numerical estimation study of underwater sound levels associated with piling operations at the Marlin B Platform to assist in understanding the potential acoustic effect on receptors including marine mammals, sea turtles, and fish including fish larvae and eggs.

The modelling study predicted the distances at which underwater sound levels from operations reached noise effect thresholds and criteria. 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.

Estimated underwater acoustic levels are presented as sound pressure levels (SPL, L_p); zero-to-peak pressure levels (PK, L_{pk}), and either single-strike (i.e., per-strike) or accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria and noise sources. In this report, the duration period for SEL accumulation is defined as a 24-hour period over which sound energy is integrated; the level is specified with the abbreviation SEL_{24h}.

Section 1 outlines the specific details of modelling study. Section 2 details the metrics used to represent underwater acoustic fields and the associated effect criteria considered. Section 3 details the methodology for predicting the source levels and modelling the sound propagation, including source levels and environmental parameters required by the propagation models. Section 4 presents the results, which are then discussed in Section 5.

1.1. Modelling Scenarios

The acoustic modelling study for conductor piling operations at the Marlin B Platform is located to the east of Bass Strait and in approximately 58 m water depth. The study considered impulsive noise from installing a single conductor pile through impact piling. Full waveform acoustic modelling (Appendix C.3) was used in this report to estimate the noise impact on marine fauna.

JASCO modelled an IHC S-150 impact hammer for use with driving a single conductor pile at one location. Modelling included variable hammer energy derived from previous driven piles at the platform as well as client-supplied drivability logs sheets. The conductor pile dimensions of the pile considered for modelling were a length of 141.1 m and a diameter of 0.66 m (26 in).

The total noise exposure (SEL) for each scenario depends on the total number of hammer blows required to drive the pile. The provided drivability logs estimated that it would take approximately 5956 blows (1.9 h driving at 46 blows per minute) to drive the piles 77 m into the substrate with a similar 150 kJ hammer. These were also used for modelling here.

This location is detailed in Table 4 and indicated graphically in Figure 1.

Table 4. Location of the piling activities in MGA coordinates (Datum GDA94, MGA Zone 55).

Designation	Latitude (S)	Longitude (E)	MGA ¹ Zone 55 (GDA94 ²)		Water depth (m)
			X (m)	Y (m)	
Marlin B Platform	38° 13' 46"	148° 13' 16"	606877	5768022	58

¹ Map Grid of Australia

² Geocentric Datum of Australia 1994

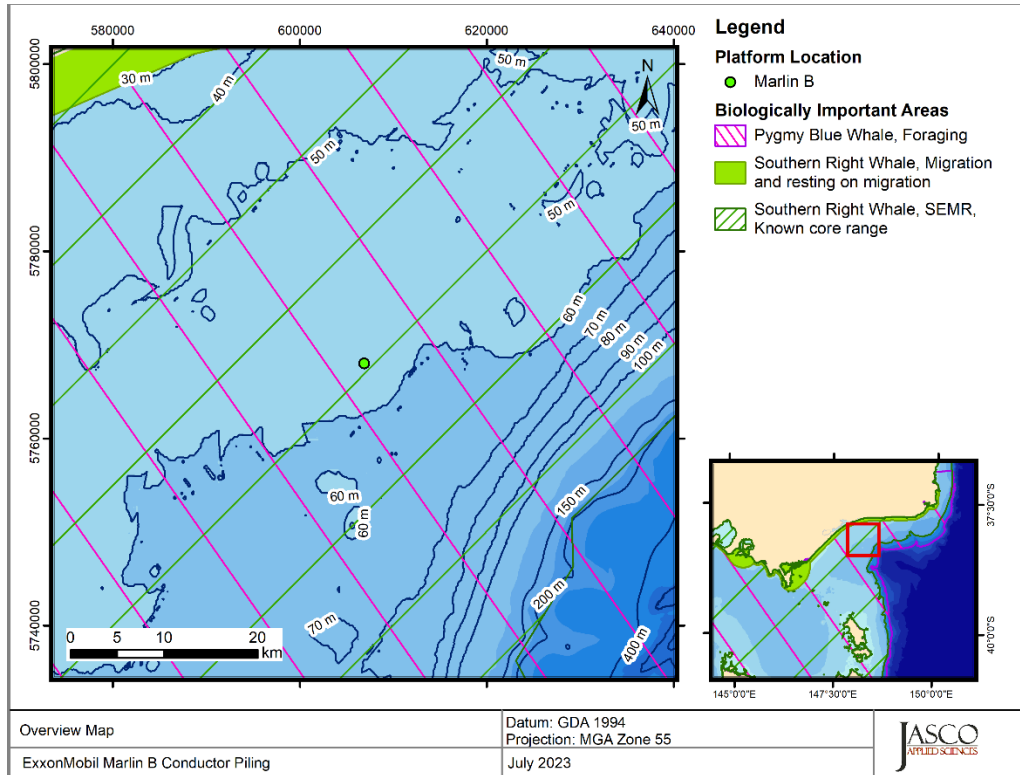


Figure 1. Overview of the modelled site and features associated with the Marlin B Platform.

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 a negative effect on animals. Whether acoustic exposure 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 (2012), Popper et al. (2014), United States National Marine Fisheries Service (NMFS 2018) and Southall et al. (2019). The number of studies that investigate the level of behavioural disturbance to marine fauna by anthropogenic sound has also increased substantially.

The perceived loudness of sound, especially impulsive noise such as from pile driving, is not generally proportional to the instantaneous acoustic pressure. Rather, perceived loudness depends on the pulse rise-time and duration, and the frequency content. Several sound level metrics, such as PK, SPL, and SEL, are commonly used to evaluate noise and its effects on marine life (Appendix A). The period of accumulation associated with SEL is defined, with this report referencing either a “per-strike” assessment or over 24 h. For non-impulsive sound sources, such as vessels, SPL and SEL are the relevant metrics. The acoustic metrics in this report reflect the ISO standard for acoustic terminology, ISO/DIS 18405:2017 (2017).

The following thresholds and guidelines for this study were chosen because they represent the best available science, and sound levels presented in literature for fauna with no defined thresholds:

1. Marine mammals:
 - a. Peak pressure levels (PK; L_{pk}) and frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Southall et al. (2019) for the onset of permanent threshold shift (PTS) and temporary threshold shift (TTS) in marine mammals for impulsive sources.
 - b. Marine mammal behavioural thresholds based on the current interim U.S. National Oceanic and Atmospheric Administration (NOAA) (2019) unweighted criterion for marine mammals of 160 dB re 1 μ Pa (SPL; L_p) for impulsive sound sources.
2. Fish, fish eggs, and larvae:
 - a. Sound exposure guidelines for fish, fish eggs, and larvae (Popper et al. 2014).
3. Sea turtles:
 - a. Frequency-weighted accumulated sound exposure levels (SEL; $L_{E,24h}$) from Finneran et al. (2017) for the onset of PTS and TTS in turtles for non-impulsive and impulsive sound sources.
 - b. Sea turtle behavioural response threshold of 166 dB re 1 μ Pa (SPL; L_p) for impulsive noise, along with a sound level associated with behavioural disturbance 175 dB re 1 μ Pa (SPL; L_p) (McCauley et al. 2000).

The following sections (Section 2.1 along with Appendices A.3 and A.4), expand on the thresholds, guidelines and sound levels for all marine fauna.

2.1. Impulsive Noise

Impact pile driving activities have been assessed as an impulsive noise source consistent with the considered thresholds and guidelines.

2.1.1. Marine Mammals

The criteria applied in this study to assess possible effects of impulsive noise sources on marine mammals are summarised Table 5; cetaceans were identified as the hearing group requiring

assessment. 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. Of particular note, whilst the newly published Southall et al. (2021) provides recommendations and discusses the nuances of assessing behavioural response, the authors do not recommend new numerical thresholds for onset of behavioural responses for marine mammals. The criteria from the current interim U.S. National Oceanic and Atmospheric Administration (NOAA) (2019) has been applied.

Table 5. Acoustic effects of impulsive noise on marine mammals: Unweighted SPL, SEL_{24h}, and PK thresholds.

Hearing group	NOAA (2019)	Southall et al. (2019)			
	Behaviour	PTS onset thresholds* (received level)		TTS onset thresholds* (received level)	
	SPL (L_p ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)
Low-Frequency (LF) cetaceans	160	183	219	168	213
High-frequency (HF) cetaceans		185	230	170	224
Very-High-frequency (VHF) cetaceans		155	202	140	196

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset.

L_p denotes sound pressure level and has a reference value of 1 μ Pa.

L_{pk} denotes peak sound pressure is flat weighted or unweighted and has a reference value of 1 μ Pa.

$L_{E,24h}$ denotes cumulative sound exposure over a 24 h period and has a reference value of 1 μ Pa²·s.

2.1.2. Fish, Sea turtles, Fish Eggs, and Fish Larvae

In 2006, the Working Group on the Effects of Sound on Fish and Sea Turtles was formed to continue developing noise exposure criteria for fish and sea turtles, work begun 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, and
- 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 Tables 6 for completeness only. Because the presence or absence of a swim bladder has a role in hearing, fish's 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 and applied to whale sharks in the absence of other information), 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.

Impulsive noise from pile driving is assessed in this study based on the relevant effects thresholds from Popper et al. (2014) listed in Table 6. In general, whether an impulsive sound adversely effects fish behaviour depends on the species, the state of the individual exposed, and other factors.

The SEL metric integrates noise intensity over some period of exposure. Because the period of integration for regulatory assessments is not well defined for sounds that do not have a clear start or end time, or for very long-lasting exposures, an exposure evaluation time must be defined. Southall et al. (2007) defines the exposure evaluation time as the greater of 24 h or the duration of the activity. Popper et al. (2014) recommend a standard period of the duration of the activity; however, the publication also includes caveats about considering the actual exposure times if fish move. Integration times in this study for piling have been applied over the time a single pile was driven because only one pile is expected to be driven per day.

Table 6. Criteria for pile driving 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)	> 219 dB SEL _{24h} or > 213 dB PK	> 216 dB SEL _{24h} or > 213 dB PK	>> 186 dB SEL _{24h}	Pile driving: (N) Moderate (I, F) Low Seismic: (N, I, F) Low	(N) High (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	210 dB SEL _{24h} or > 207 dB PK	203 dB SEL _{24h} or > 207 dB PK	>> 186 dB SEL _{24h}	Pile driving: (N) Moderate (I, F) Low Seismic: (N, I, F) Low	(N) High (I) Moderate (F) Low
Fish: Swim bladder involved in hearing (primarily pressure detection)	207 dB SEL _{24h} or > 207 dB PK	203 dB SEL _{24h} or > 207 dB PK	186 dB SEL _{24h}	Pile driving: (N, I) High (F) Moderate Seismic: (N, I) Low (F) Moderate	(N, I) High (F) Moderate
Fish eggs and fish larvae	> 210 dB SEL _{24h} or > 207 dB PK	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low	Pile driving: (N) Moderate (I, F) Low Seismic: (N, I, F) Low	(N) Moderate (I, F) Low

Peak sound pressure level: dB re 1 µPa; SEL_{24h} dB re 1µPa²·s.

All criteria are presented as sound pressure even for fish without swim bladders since no data for particle motion exist. Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N), intermediate (I), and far (F).

There is a paucity of data regarding responses of turtles to acoustic exposure, and no studies of hearing loss due to exposure to loud sounds. Popper et al. (2014) suggested thresholds for onset of mortal injury (including PTS) and mortality for sea turtles and, in absence of taxon-specific information, adopted the levels for fish that do not hear well (suggesting that this likely would be conservative for sea turtles). Finneran et al. (2017) in turn presented revised thresholds for sea turtle injury and hearing impairment (TTS and PTS). Their rationale is that sea turtles have best sensitivity at low frequencies and are known to have poor auditory sensitivity (Bartol and Ketten 2006, Dow Piniak et al. 2012). Accordingly, TTS and PTS thresholds for turtles are likely more similar to those of fishes than to marine mammals (Popper et al. 2014).

McCauley et al. (2000) observed the behavioural response of caged sea turtles—green (*Chelonia mydas*) and loggerhead (*Caretta caretta*)—to an approaching seismic airgun. For received levels

above 166 dB re 1 μ Pa (SPL), the sea turtles increased their swimming activity, and above 175 dB re 1 μ Pa they began to behave erratically, which was interpreted as an agitated state. The Recovery Plan for Marine Turtles in Australia (Department of the Environment and Energy et al. 2017) acknowledges the 166 dB re 1 μ Pa SPL reported (McCauley et al. 2000) as the level that may result in a behavioural response to marine turtles. The 175 dB re 1 μ Pa level from McCauley et al. (2000) is recommended as a criterion for behavioural disturbance; these thresholds are shown in Table 7.

Table 7. Acoustic effects of impulsive noise on sea turtles: Unweighted sound pressure level (SPL), 24-hour sound exposure level (SEL_{24h}), and peak pressure (PK) thresholds

Effect type	Criterion	SPL (L_p ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)
Behavioural response	McCauley et al. (2000)	166	NA	
Behavioural disturbance		175		
PTS onset thresholds ¹ (received level)	Finneran et al. (2017)	NA	204	232
TTS onset thresholds ¹ (received level)			189	226

¹ Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS and TTS onset.

L_p denotes sound pressure level and has a reference value of 1 μ Pa.

L_{pk} denotes peak sound pressure is flat weighted or unweighted and has a reference value of 1 μ Pa.

$L_{E,24h}$ denotes cumulative sound exposure over a 24 h period and has a reference value of 1 μ Pa²·s.

3. Methods

3.1. Per-strike Modelling

When driven with impact hammers, piles deform, creating a stress wave that travels down the pile and radiates sound into the surrounding air, water, and seabed. This sound may be received as a direct transmission from the sound source to biological receivers (such as marine mammals, sea turtles, and fish) through the water or as the result of reflected paths from the surface or re-radiated into the water from the seabed. Sound transmission depends on many environmental parameters, such as the sound speeds in water and substrates; material parameters of the pile and how it is driven, including the pile material, size (length, diameter, and thickness) and the type and energy of the hammer.

To predict the acoustic field from the pile driving, JASCO's Pile Driving Source Model (PDSM; Appendix B), a physical model of pile vibration and near-field sound radiation (MacGillivray 2014), was used in conjunction with the GRLWEAP 2010 wave equation model (GRLWEAP, Pile Dynamics 2010) to predict source levels associated with impact pile driving activities. Piles are modelled as a vertical installation using a finite-difference structural model of pile vibration based on thin-shell theory. The sound radiating from the pile itself was simulated using a vertical array of discrete point sources. GRLWEAP 2010 was used to compute the force at the top of each pile assuming direct contact between the representative hammers, helmets, and piles. The pile was modelled at three representative depths to account for variability over the entire drive, detail is provided in Table 8.

Table 8. Modelled pile driving hammer parameters.

Hammer model	Modelled Depths (m)	Modelled Energy (kJ)	Hammer Efficiency (%)	Ram weight (t)	Hammer weight (t)	Modelled blow rate (per min)
IHC S-150	15.3	45.9	31	7.5	16.2	44
	40.0	42.0	28			
	64.7	61.0	41			

The forcing functions serve as inputs to JASCO's pile driving source model (PDSM), which was used to estimate equivalent acoustic source characteristics detailed in Appendix B.1.2. Forcing functions for the hammer were modelled assuming that driving was carried out using the associated hammer energy for each modelled segment by adjusting the hammers efficiency (Figure 2). As discussed earlier, these efficiencies/energies were derived from insitu pile drivability logs for similar conductor piles previously installed at the Marlin B Platform.

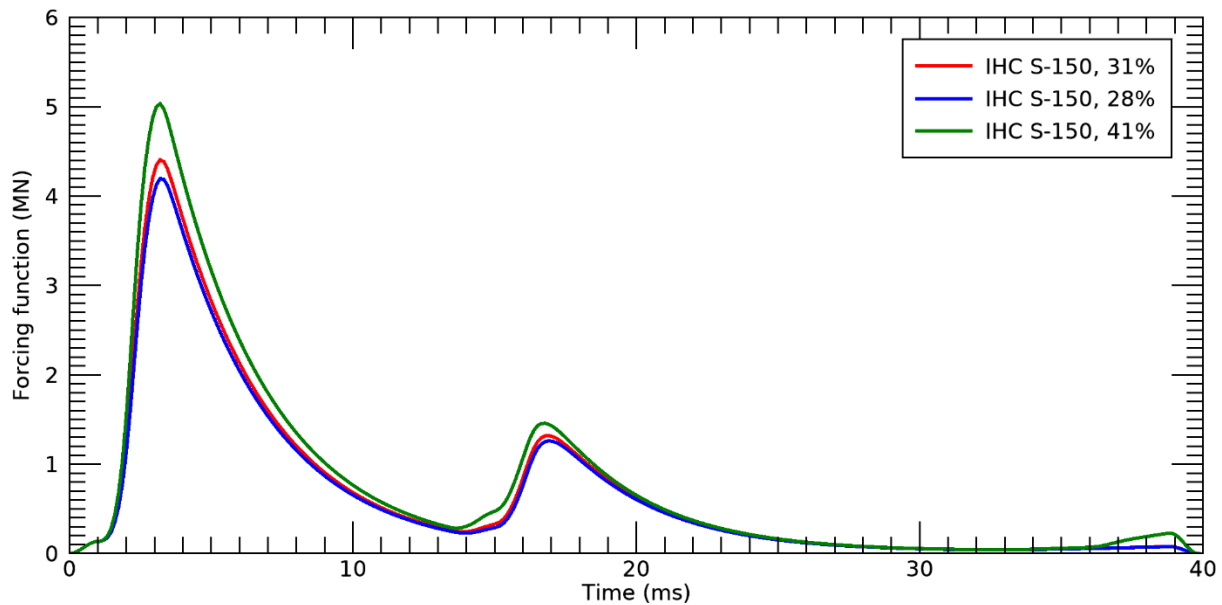


Figure 2. Modelled forcing function versus time for the IHC S-150 hydraulic impact hammer for 0.66 m diameter piles at three efficiencies.

JASCO's FWRAM (FWRAM, Appendix C.3) propagation model was used to combine the outputs of the source model with spatial environmental factors (e.g., location, oceanographic conditions, and seabed type, see Appendix C.1 for detail) to get time-domain representations of the sound signals in the environment and estimate sound field levels. This model is used to estimate the energy distribution per frequency (source spectrum) at a close distance from the source (10 m) from 10 Hz to 1024 Hz. In addition, an empirical extrapolation was applied to these results to extend the frequency range up to 25 kHz and a 20 dB/decade decay rate was applied to match acoustic measurements of impact pile driving of similarly-sized piles (Illingworth & Rodkin 2007, Matuschek and Betke 2009). Examples of decidecade band levels are provided in Section 4.1.1. Appendix A.1 describes the sound level metrics in further detail.

To produce maps of received sound level distributions and to calculate distances to specified sound level thresholds, the maximum-over-depth level is calculated at each modelled easting and northing position within the considered region. The radial grids of maximum-over-depth levels are then resampled (by linear triangulation) to produce a regular Cartesian grid with a cell size of 20 m. The contours and threshold ranges were calculated from these flat Cartesian projections of the modelled acoustic fields (Appendix C.4).

3.2. Accumulated SEL Modelling for Pile Driving

The modelling approach outlined in Sections 3.1 provides per-strike SEL for three stages of pile driving (i.e., three penetration depths). Because a single pile will be driven per day and the piling noise level far exceeds any background, the corresponding sound exposure level can be denoted as SEL_{24h} even though the effective period of accumulation is the estimated time for fully driving a single pile. The accumulated SEL over a single pile, or the SEL_{24h} , depends on the total number of strikes to drive the pile to the target penetration depth.

Total driving time was estimated assuming continuous piling at a rate of 44 strikes/minute for the IHC S-150. As per the pile design, likely hammer and installation approach, the number of strikes required for the driving of the pile were estimated using the provided drivability with a hammer of similar energy. The SEL_{24h} was computed by adjusting the single-strike SEL by $10 \cdot \log_{10}(N)$, where N is the

total number of strikes. A summary of the total number of strikes per penetration depth and over the entire pile is provided in Table 9.

Table 9. Total number of strikes and driving time. Strikes were broken down into stages corresponding to the three modelled penetrations for the IHC S-150 hammer. Pile specifications are shown in Table 8.

Pile Type	Hammer	Full penetration depth (m)	Modelled penetration depth (m)	Penetration range for accumulated SEL (m)	Number of strikes	Average Penetration rate (mm/strike)	Total number of strikes	Time for full penetration (hr)
Conductor Pile	IHC S-150	77	15.3	24.7	1862	13.2	5956	2.26
			40.0	24.6	1464	16.8		
			64.7	24.7	2630	9.4		

4. Results

For the results and tables presented below where a dash is used in place of a horizontal distance, these thresholds may or may not be reached due to the discretely sampled radial increments of the modelled sound fields. A dash therefore is an indication that effect levels for the associated metric may only be reached within a very close proximity to a given source.

4.1. Pile Driving

The maximum-over-depth sound fields for the modelled pile driving scenarios are presented in two formats: as tables of distances to sound levels (Section 4.1.2) and, where the distances are long enough, as contour maps showing the directivity and range to various sound levels (Section 4.1.3).

4.1.1. Received Levels at 10 m

Since piles are distributed and directional sources, they cannot be accurately approximated by a point source with corresponding source levels. It is possible to compare the maximum modelled levels at short distances from the piles. Figure 3 shows the decidecade-band levels for the receiver with the highest SEL at a horizontal range of 10 m, for each of the three modelled penetration depths.

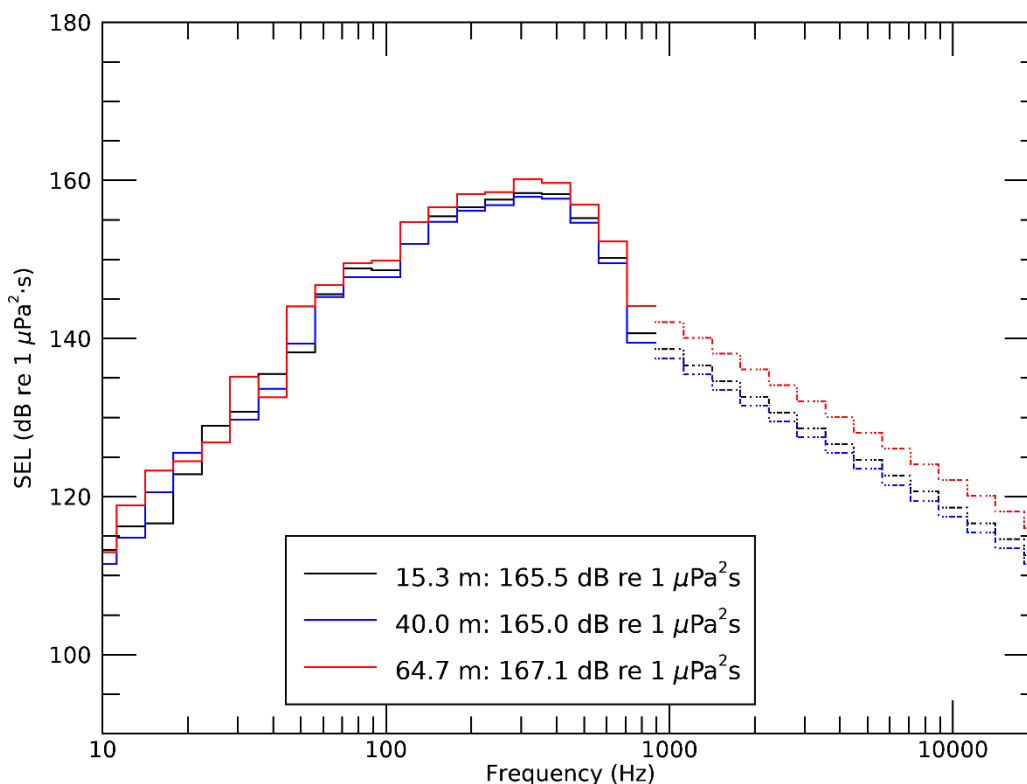


Figure 3. Decidecade-band levels for the receiver with highest SEL at 10 m horizontal range for impact pile driving using the IHC S-150 hammer, after high-frequency extrapolation (dashes indicate extrapolated portion of the spectrum above 1000 Hz). Legend items indicate the modelled pile penetration and the broadband SEL in dB re 1 $\mu\text{Pa}^2\cdot\text{s}$.

4.1.2. Tabulated Results

This section presents the per-strike sound fields in terms of maximum-over-depth SPL, SEL, and PK. The different metrics are presented for the following reasons:

- SPL sound fields (Table 10) were used to determine the distances to marine mammal and turtle behavioural thresholds (see Section 2.1).
- SEL sound fields (Table 11) are used as inputs into the 24 h SEL scenario.
- PK metrics within the water column (Table 12) are relevant to thresholds and guidelines for marine mammals, sea turtles, fish, fish eggs and larvae (see Section 2.1).

Frequency-weighted SEL_{24h} sound fields were used to estimate the maximum distance and the area (R_{\max} %; calculated as detailed in Appendix C.4) to marine mammals and turtle PTS and TTS thresholds (listed in Table 13), and to estimate maximum distance and the area to injury and TTS guidelines for fish (Table 14).

Table 10. *Modelled maximum-over-depth per-strike SPL isopleths: Maximum (R_{\max}) and 95% ($R_{95\%}$) horizontal distances (in km) from each pile and for each penetration depth.*

SPL (L_p ; dB re 1 μ Pa)	Penetration depth					
	15.3 m		40.0 m		64.7 m	
	R_{\max} (km)	$R_{95\%}$ (km)	R_{\max} (km)	$R_{95\%}$ (km)	R_{\max} (km)	$R_{95\%}$ (km)
200	–	–	–	–	–	–
190	–	–	–	–	–	–
180	–	–	–	–	–	–
175 ¹	–	–	–	–	–	–
170	0.05	0.05	0.05	0.05	0.09	0.09
166 ²	0.12	0.12	0.12	0.11	0.15	0.15
160 ³	0.32	0.31	0.31	0.30	0.45	0.44
150	1.15	1.06	1.04	1.01	1.57	1.40
140	3.03	2.77	2.91	2.66	3.42	3.15
130	5.26	4.86	5.04	4.74	5.80	5.40

¹ Threshold for turtle behavioural disturbance from impulsive noise (McCauley et al. 2000).

² Threshold for turtle behavioural response to impulsive noise (McCauley et al. 2000).

³ Marine mammal behavioural threshold for impulsive sound sources (NOAA 2019).

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

Table 11. Modelled maximum-over-depth per-strike SEL isopleths: Maximum (R_{max}) and 95% ($R_{95\%}$) horizontal distances (in km) from each pile and for each penetration depth.

Per-strike SEL (L_E ; dB re 1 $\mu\text{Pa}^2\cdot\text{s}$)	Penetration depth (m)					
	15.3 m		40.0 m		64.7 m	
	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)	R_{max} (km)	$R_{95\%}$ (km)
190	–	–	–	–	–	–
180	–	–	–	–	–	–
170	–	–	–	–	–	–
162 ¹	0.04	0.04	0.02	0.02	0.06	0.06
160	0.07	0.07	0.06	0.06	0.11	0.10
150	0.34	0.33	0.33	0.32	0.49	0.48
140	1.41	1.22	1.28	1.12	1.75	1.57
130	3.29	3.03	3.17	2.91	3.77	3.47

¹¹ Startle response level for squid (Fewtrell and McCauley 2012).

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

Table 12. Maximum (R_{max}) horizontal distances (in km) from the pile to modelled maximum-over-depth peak pressure level (PK) thresholds based on Southall et al. (2019) for marine mammals, and Popper et al. (2014) for fish and Finneran et al. (2017) for sea turtles, for relevant modelled site with water depth indicated.

Hearing group	PK threshold (L_{pk} ; dB re 1 μPa)	Penetration Depth (m)		
		15.3	40	64.7
		R_{max} (km)	R_{max} (km)	R_{max} (km)
PTS				
LF cetaceans	219	–	–	–
HF cetaceans	230	–	–	–
VHF cetaceans	202	–	–	–
Sea turtles	232	–	–	–
TTS				
LF cetaceans	213	–	–	–
HF cetaceans	224	–	–	–
VHF cetaceans	196	–	–	–
Sea turtles	226	–	–	–
Fish				
Fish I (also applied to sharks)	213	–	–	–
Fish II, III Fish eggs, and larvae	207	–	–	–

Fish I–No swim bladder; Fish II–Swim bladder not involved with hearing; Fish III–Swim bladder involved with hearing.

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

Table 13. Maximum-over-depth distances (in km) to frequency-weighted 24 h sound exposure level (SEL_{24h}) based PTS and TTS for marine mammals (Southall et al. 2019) and sea turtles (Finneran et al. 2017) considering the driving of the entire pile.

Fauna group	Threshold for SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	Conductor pile	
		R _{max} (km)	Area (km ²)
PTS			
LF cetaceans	183	0.67	1.25
HF cetaceans	185	–	–
VHF cetaceans	155	0.08	0.02
Sea turtles	203	–	–
TTS			
LF cetaceans	168	2.93	24.6
HF cetaceans	170	–	–
VHF cetaceans	140	1.02	2.81
Sea turtles	188	–	–

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

Table 14. Distances to 24 h sound exposure level (SEL_{24h}) based fish criteria in the water column.

Marine fauna group	Threshold for SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² ·s)	Conductor pile	
		R _{max} (km)	Area (km ²)
Fish I	219	–	–
Fish II, fish eggs and fish larvae	210	–	–
Fish III	207	–	–
Recoverable injury			
Fish I	216	–	–
Fish II, III	203	–	–
Temporary threshold shift (TTS)			
Fish I, II, III	186	0.63	0.85

Fish I–No swim bladder; Fish II–Swim bladder not involved with hearing; Fish III–Swim bladder involved with hearing.

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

4.1.3. Sound field maps

Maps of the per strike sound fields are presented as maximum-over-depth sound level contour maps in Figures 4–6 and as vertical slice plots in Figure 7–9 for selected azimuths. Accumulated SEL_{24h} maps are shown in Figures 10 and 11 for selected weightings.

4.1.3.1. SPL Sound level contour maps

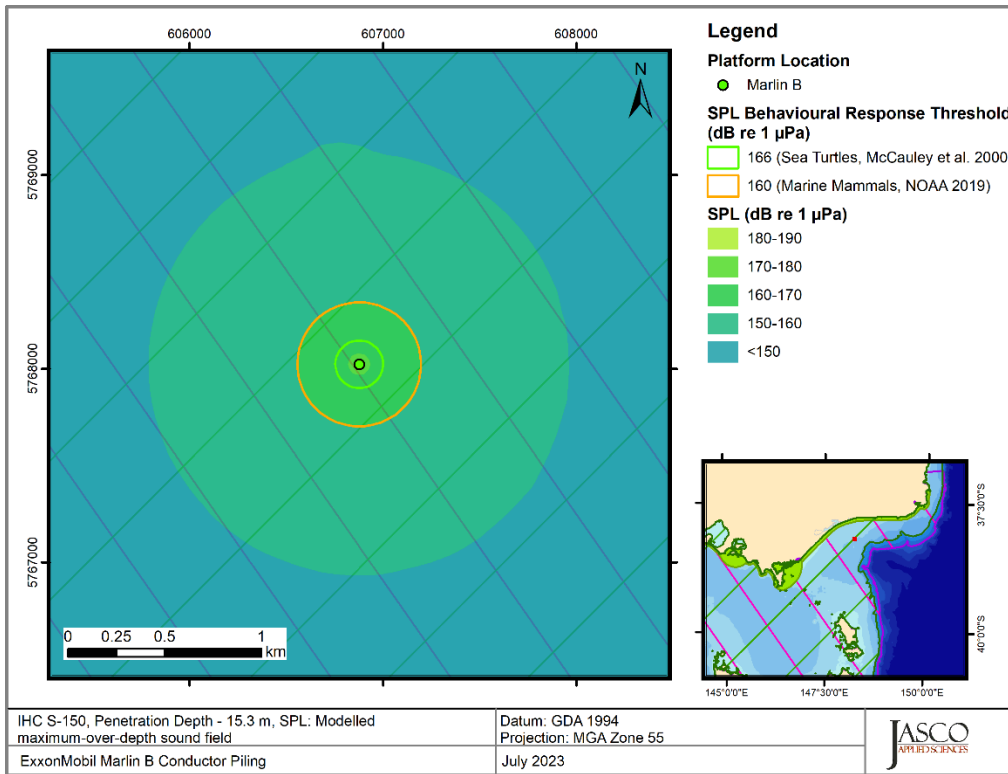


Figure 4. Pile penetration depth – 15.3 m, SPL: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural thresholds for marine mammals and sea turtles.

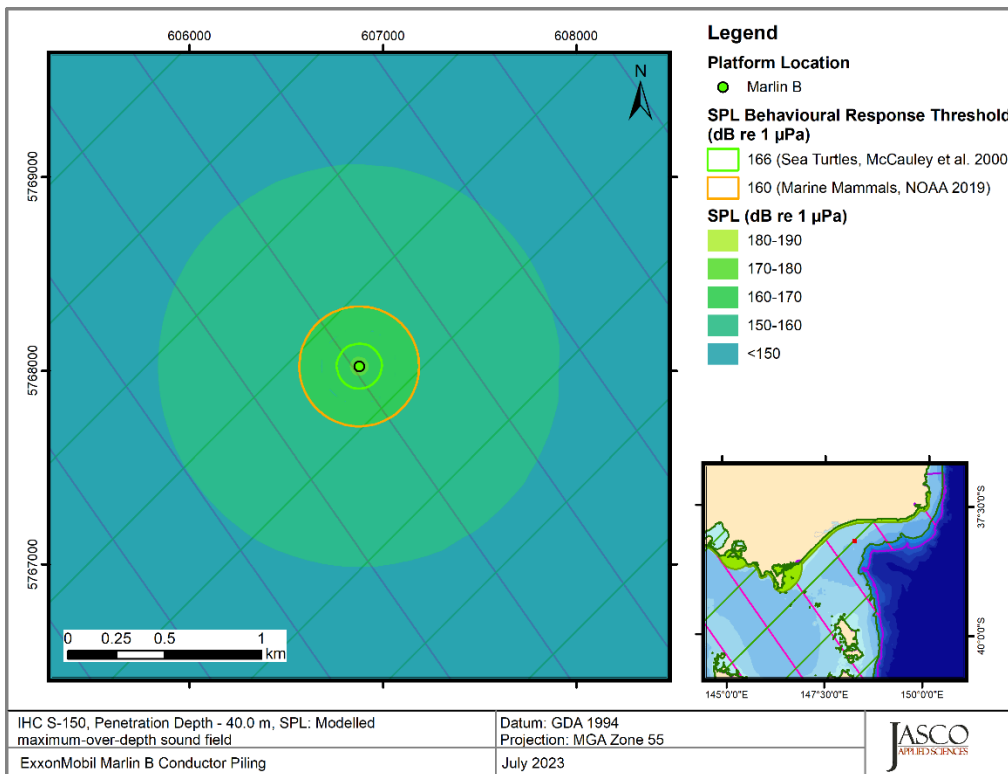


Figure 5. Pile penetration depth – 40.0 m, SPL: **Error! Reference source not found.**

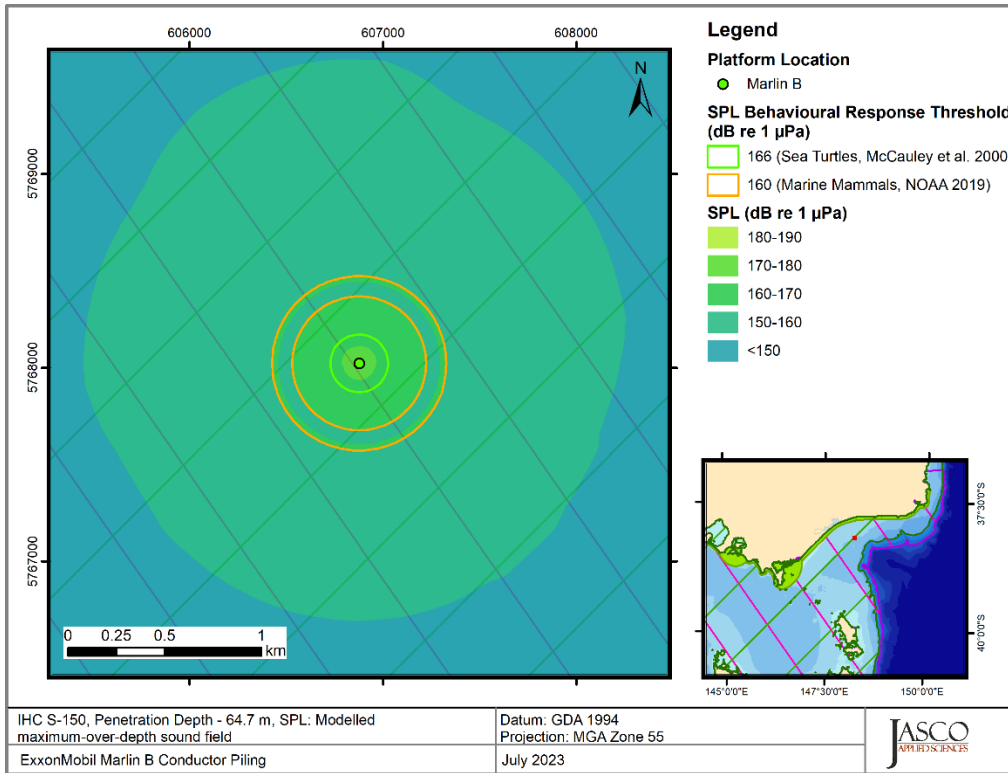


Figure 6. Pile penetration depth – 64.7 m, SPL: **Error! Reference source not found.**

4.1.3.2. SPL Per-strike Vertical Slice Plots

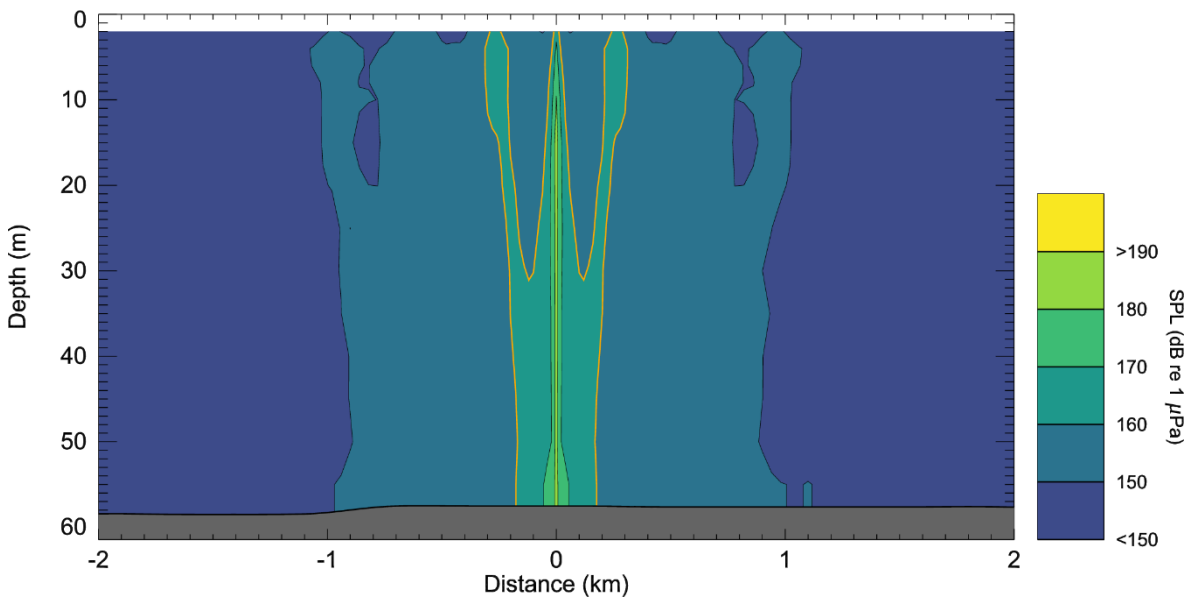


Figure 7. Pile penetration depth – 15.3 m, SPL: Vertical slice plot showing variations with depth and distance from the pile for the first penetration depth. The seabed is shown as dark grey. The orange contour indicates the marine mammal behavioural threshold for impulsive sound sources (NOAA 2019). Cross sections are along the 45°/225° transect.

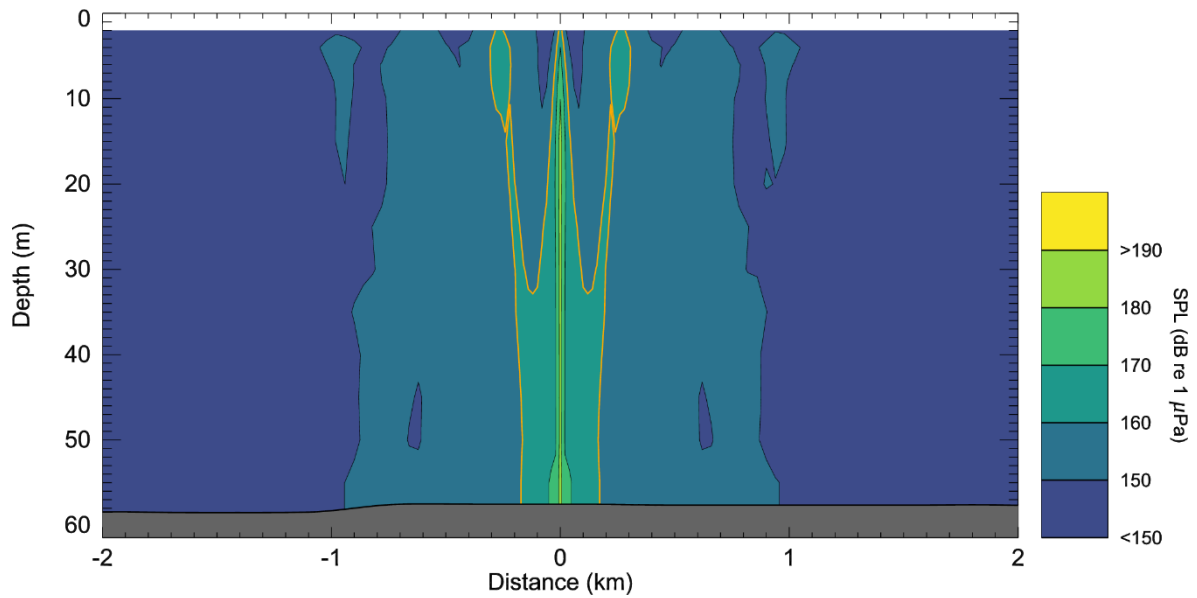


Figure 8. *Pile penetration depth – 40 m, SPL:* Vertical slice plot showing variations with depth and distance from the pile for the second penetration depth. The seabed is shown as dark grey. The orange contour indicates the marine mammal behavioural threshold for impulsive sound sources (NOAA 2019). Cross sections are along the 135°/315° transect.

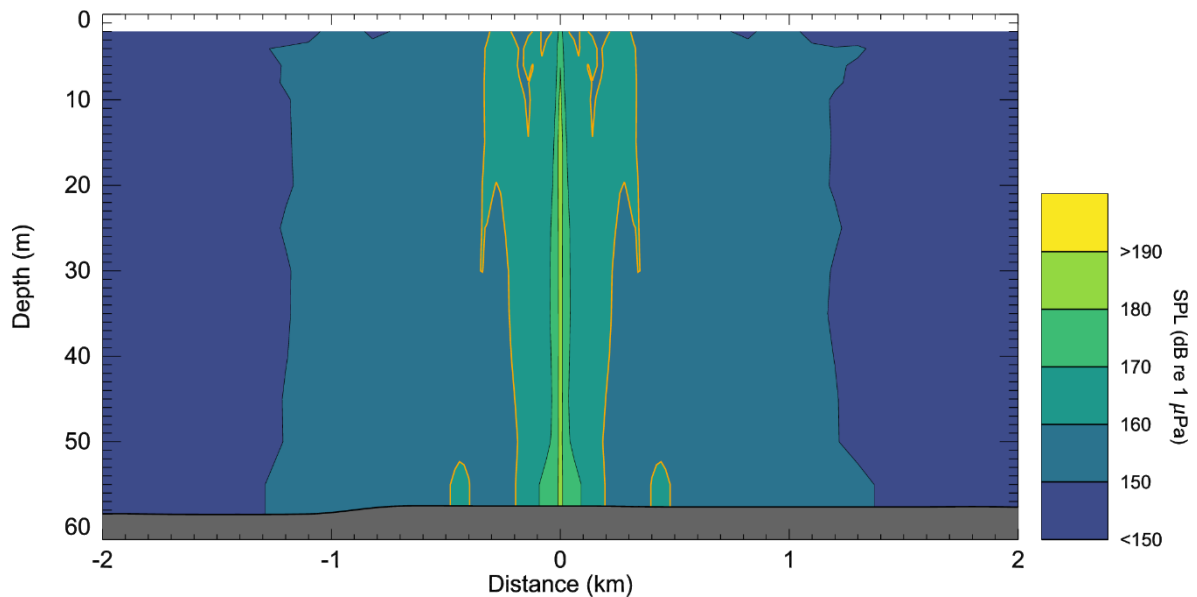


Figure 9. *Pile penetration depth – 64.7 m, SPL:* Vertical slice plot showing variations with depth and distance from the pile for the third penetration depth. The seabed is shown as dark grey. The orange contour indicates the marine mammal behavioural threshold for impulsive sound sources (NOAA 2019). Cross sections are along the 135°/315° transect.

4.1.3.3. Accumulated SEL_{24h} Sound level contour maps

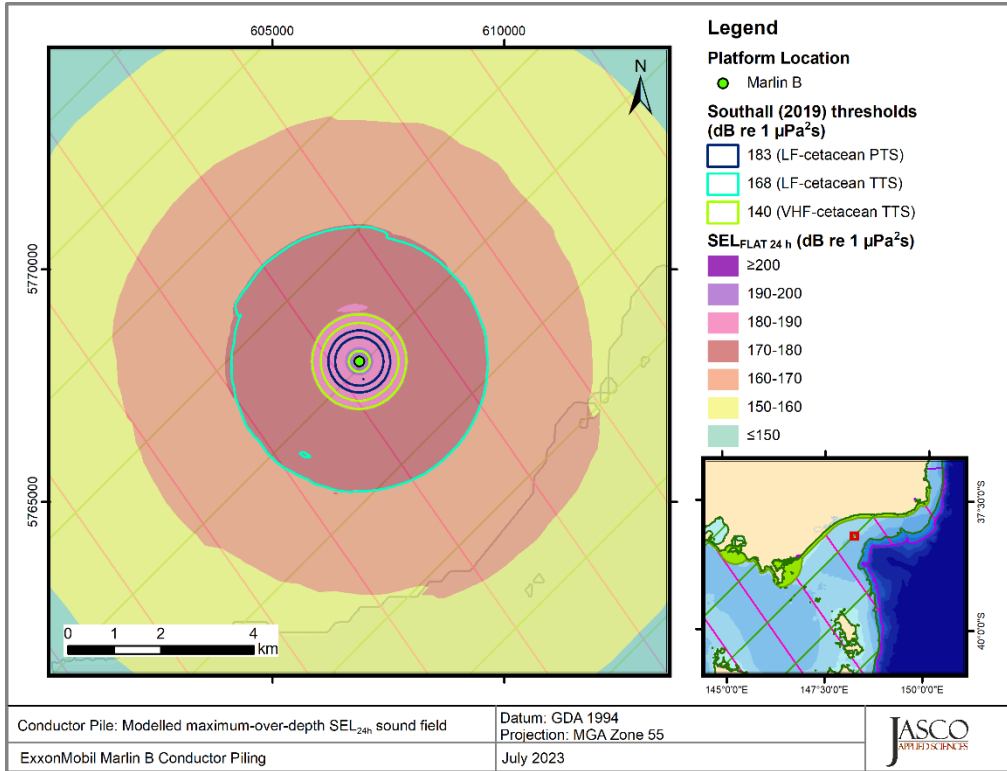


Figure 10. Sound level contour map of unweighted maximum-over-depth SEL_{24h} results, along with isopleths for cetaceans and sea turtles. Thresholds omitted here were not reached or not large enough to display graphically. Refer to Table 13 for threshold distances.

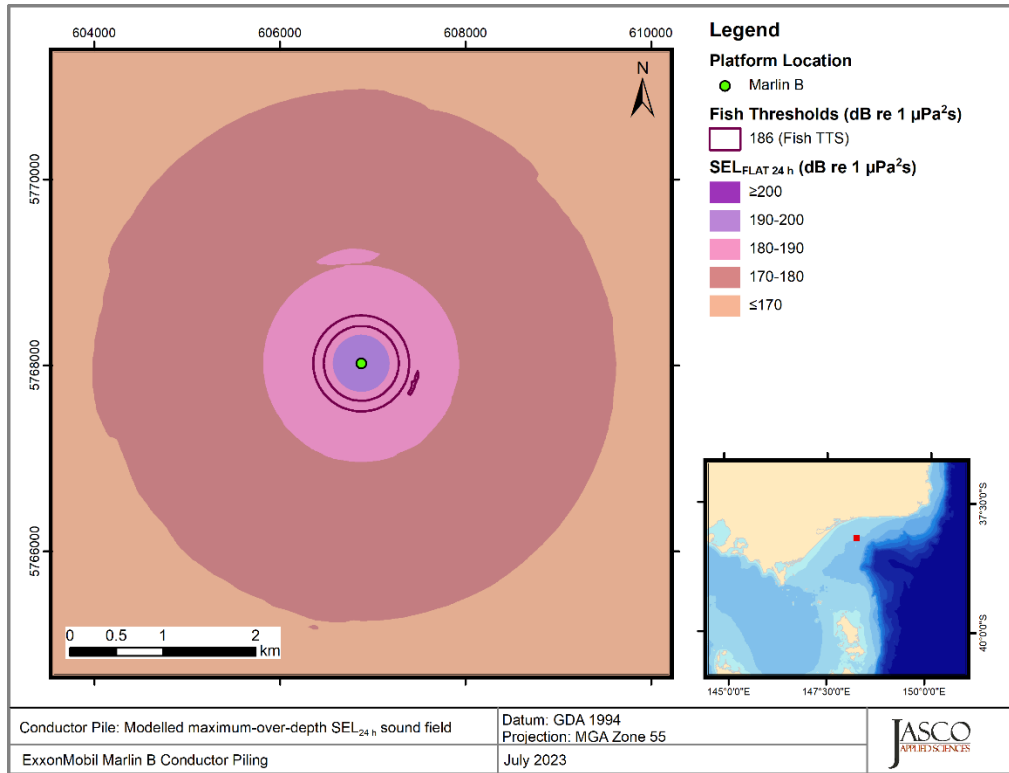


Figure 11. Sound level contour map of unweighted maximum-over-depth SEL_{24h} results, along with isopleths relevant to fish injury and TTS. Fish I–No swim bladder; Fish II–Swim bladder not involved with hearing; Fish III–Swim bladder involved with hearing.

5. Discussion and Conclusion

This study specifically predicted underwater sound levels associated with impact driving of a conductor pile at the Marlin B platform. An analysis of seasonal sound speed profiles indicated that June was most likely to result in furthest distance sound propagation due to the presence of an upward refracting layer near the sea surface. As such it was selected as part of a conservative approach to modelling distances to received sound level thresholds at any month of the year (Appendix C.1.2). Modelling also accounted for site-specific bathymetric variations (Appendix C.1.1), and local geoacoustic properties (Appendix C.1.3).

The modelled site encompassed water depths around 58 m across one defined geological area, comprised of unconsolidated sediments with some weakly cemented interbedded limestones, and a single representative water column profile. The Marlin B platform is on a continental shelf where the bathymetry within the activity area varied very gradually within the vicinity of the modelled site. The combination of low-frequency content from the pile driving and the water depths within the survey area resulted in the sound field substantially interacting with the seabed. The maximum-over-depth sound footprint maps and vertical slice plots (Section 4.1.3) assist in demonstrating the influence of the bathymetry, sound speed profile and seabed composition on the sound field.

The footprint maps and cross-sections in Section 4.1.3 show that the sound field is mostly axisymmetric. In some cases, the isopleths had several contours, for example see the sound field map Figure 6 and its corresponding vertical slice plot Figure 9. This can occur as a result of the reflection of the sound field off the seafloor, creating additional rings around the initial isopleth.

5.1. Pile Driving

This study predicted underwater sound levels associated with impact driving of subsea piles at the Marlin B platform. The pile driving scenario is based on the likely pile designs, hammer specifications, previous pile driving drivability logs.

The underwater sound field was modelled for a 141.1 m long pile with a 0.66 m diameter with 20.6 mm wall thickness. The anchor piles will be driven a total of 77 m into the seabed, but modelled at representative depths of 15.3, 40, and 64.7 m. The broadband sound energy at 10 m for each penetration depth ranged from 165.0 to 167.1 dB re 1 $\mu\text{Pa}^2\text{-s}$ with the peak sound energy concentrated in the frequency range 100 to 400 Hz (see Figure 3), with levels from the pile at the 67.4 m penetration depth having the highest energy.

Sound emissions from pile driving were considered here to be axially symmetric. As such, variations in propagation characteristics between azimuths are attributed to the bathymetry alone. When the hammer strikes the pile, noise propagates into the water as a downward Mach cone (see Appendix B-6). A portion of the energy from the strike is also reflected at the pile bottom, generating an upward Mach cone. This cycle of downward propagation, reflection, and upward propagation occurs multiple times per strike. At close range from the pile, noise levels are determined by the summation of Mach cones, which might add constructively (i.e., their summation results in a total wave with higher amplitude than the original ones) or destructively (i.e., wavefronts can cancel each other, resulting in lower amplitudes). The way in which Mach cones combine with each other is strongly dependent on their frequency content, which is determined by the hammer forcing function and the pile dimensions.

Due to the relation between the speed of sound in steel (~5000 m/s) relative to the speed of sound in the water (~1500 m/s at the depth of the pile), the Mach cone propagates away from the pile and impinges the seabed at an angle of ~17°.

The modelling of the three penetration depths for the pile provides a detailed quantification of the associated sound levels for each penetration. The distances to per-strike isopleths are generally farthest when the hammer is used at a higher energy.

For criteria based on SEL_{24h} metrics, the ranges above must be considered in context of the duration of operations. One pile will be driven per day; therefore, the corresponding sound level is denoted as SEL_{24h}. The estimated time for driving a single pile was 2.26 h (Table 9). The SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels within the driving period and assumes that an animal is consistently exposed to such noise levels at a fixed position. The radii that correspond to SEL_{24h} typically represent an unlikely worst-case scenario for SEL-based exposure since. More realistically, marine fauna (mammals, sea turtles or fish) would not stay in the same location or at the same range for an extended period. Therefore, a reported radius associated with the accumulated SEL criteria does not mean that any animal travelling within this radius of the source will be injured, but rather that it could be injured if it remained in that range for the entire period of driving. While it may be nominally feasible to install more than one pile per day, this scenario would need to be considered in the modelling.

A summary of distances to relevant acoustic thresholds for pile driving are shown in Table 15.

Table 15. *Piling Operations: Maximum (R_{max}) horizontal distances (in km) to relevant thresholds for marine fauna.*

Hearing group	Threshold Type	Metric	Threshold	Marlin B
				R _{max} (km)
Low frequency cetaceans	PTS ^a	L _{E,24h}	183	0.67
	TTS ^a	L _{E,24h}	168	2.93
High frequency cetaceans	PTS ^a	L _{E,24h}	185	–
	TTS ^a	L _{E,24h}	170	–
Very high-frequency cetaceans	PTS ^a	L _{E,24h}	155	0.08
	TTS ^a	L _{E,24h}	140	1.02
All Marine Mammal Groups	Behavioural Response ^b	L _p	160	0.45
Fish without swim bladder	Mortality and Potential mortal injury ^c	L _{E,24h}	219	–
	Recoverable injury ^c	L _{E,24h}	216	–
	TTS ^c	L _{E,24h}	186	–
	Recoverable injury ^c	L _{pk}	213	–
Fish with swim bladder not involved in hearing	Mortality and Potential mortal injury ^c	L _{E,24h}	210	–
	Recoverable injury ^c	L _{E,24h}	203	–
	TTS ^c	L _{E,24h}	186	0.63
	Recoverable injury ^c	L _{pk}	207	–
Fish with swim bladder involved in hearing	Mortality and Potential mortal injury ^c	L _{E,24h}	207	–
	Recoverable injury ^c	L _{E,24h}	203	–
	TTS ^c	L _{E,24h}	186	0.63
	Recoverable injury ^c	L _{pk}	207	–
Sea turtles	PTS ^d	L _{E,24h}	204	–
	TTS ^d	L _{E,24h}	189	–
	Behavioural disturbance ^e	L _p	166	0.15
	Behavioural response ^e	L _p	175	–

L_{pk}= unweighted peak sound pressure level (dB re 1 µPa)

L_p= unweighted root-mean-square sound pressure level (dB re 1 µPa)

L_E= sound exposure level for single strike (dB re 1 µPa² s)

L_{E,24h}= sound exposure level over 24 hours (dB re 1 µPa² s), unweighted for fish and frequency weighted for all other groups

^a Southall et al. (2019) criteria for marine fauna

^b NOAA (2019) recommended unweighted behavioural threshold for marine mammals

^c Popper et al. (2014)

^d Finneran et al. (2017)

^e McCauley et al. (2000)

Glossary

Unless otherwise stated in an entry, these definitions are consistent with ISO 18405 (2017).

1/3-octave

One third of an **octave**. *Note:* A 1/3-octave is approximately equal to one **decidecade** ($1/3 \text{ oct} \approx 1.003 \text{ ddec}$).

1/3-octave-band

Frequency band whose **bandwidth** is one **1/3-octave**. *Note:* The **bandwidth** of a 1/3-octave-band increases with increasing centre frequency.

90 % energy time window

The time interval over which the cumulative energy rises from 5 to 95 % of the total pulse energy. This interval contains 90 % of the total pulse energy. Used to compute the **90 % sound pressure level**. Unit: second (s). Symbol: T_{90} .

90 % sound pressure level (90 % SPL)

The **sound pressure level** calculated over the **90 % energy time window** of a pulse. Unit: **decibel (dB)**.

absorption

The conversion of **sound** energy to heat energy. Specifically, the reduction of **sound pressure** amplitude due to particle motion energy converting to heat in the propagation medium.

acoustic impedance

The ratio of the **sound pressure** in a medium to the volume flow rate of the medium through a specified surface due to the **sound** wave. It is a measure of how well sound propagates through a particular medium.

acoustic noise

Sound that interferes with an acoustic process.

acoustic self-noise

Sound at a receiver caused by the deployment, operation, or recovery of a specified receiver, and its associated platform (ISO 18405:2017).

ambient sound

Sound that would be present in the absence of a specified activity (ISO 18405:2017). Usually a composite of sound from many sources near and far, e.g., shipping vessels, seismic activity, precipitation, sea ice movement, wave action, and biological activity.

attenuation

The gradual loss of acoustic energy from **absorption** and scattering as **sound** propagates through a medium. Attenuation depends on **frequency**—higher frequency sounds are attenuated faster than lower frequency sounds.

auditory frequency weighting

The process of applying an **auditory frequency-weighting function**. An example for marine mammals are the auditory frequency-weighting functions published by Southall et al. (2007).

auditory frequency-weighting function

Frequency-weighting function describing a compensatory approach accounting for a species' (or functional hearing group's) frequency-specific hearing sensitivity.

azimuth

A horizontal angle relative to a reference direction, which is often magnetic north or the direction of travel. In navigation it is also known as bearing.

background noise

Combination of [ambient sound](#), [acoustic self-noise](#), and, where applicable, sonar reverberation (ISO 18405:2017) that is detected, measured, or recorded with a signal.

bandwidth

A range within a continuous band of frequencies. Unit: hertz (Hz).

broadband level

The total [level](#) measured over a specified [frequency](#) range. If the frequency range is unspecified, the term refers to the entire measured frequency range.

cavitation

A rapid formation and collapse of vapor cavities (i.e., bubbles or voids) in water, most often caused by a rapid change in pressure. Fast-spinning vessel propellers typically cause cavitation, which creates a lot of noise.

cetacean

Member of the order Cetacea. Cetaceans are aquatic mammals and include whales, dolphins, and porpoises.

compressional wave

A mechanical vibration wave in which the direction of particle motion is parallel to the direction of propagation. Also called a longitudinal wave. In seismology/geophysics, it's called a primary wave or P-wave. [Shear waves](#) in the seabed can be converted to compressional waves in water at the water-seabed interface.

conductivity-temperature-depth (CTD)

Measurement data of the ocean's conductivity, temperature, and depth; used to compute [sound speed profiles](#) and salinity.

continuous sound

A [sound](#) whose [sound pressure level](#) remains above the [background noise](#) during the observation period and may gradually vary in intensity with time, e.g., sound from a marine vessel.

decade

Logarithmic [frequency](#) interval whose upper bound is ten times larger than its lower bound (ISO 80000-3:2006). For example, one decade up from 1000 Hz is 10,000 Hz, and one decade down is 100 Hz.

decibel (dB)

Unit of [level](#) used to express the ratio of one value of a power quantity to another on a logarithmic scale. Especially suited to quantify variables with a large dynamic range.

decidecade

One tenth of a [decade](#). Approximately equal to one third of an octave ($1 \text{ ddec} \approx 0.3322 \text{ oct}$), and for this reason sometimes referred to as a [1/3-octave](#).

decidecade band

Frequency band whose [bandwidth](#) is one [decidecade](#). *Note:* The bandwidth of a decidecade band increases with increasing centre frequency.

energy source level

A property of a [sound](#) source equal to the [sound exposure level](#) measured in the [far field](#) plus the [propagation loss](#) from the acoustic centre of the source to the receiver position. Unit: [decibel \(dB\)](#). Reference value: $1 \mu\text{Pa}^2 \text{m}^2 \text{s}$.

ensonified

Exposed to [sound](#).

far field

The zone where, to an observer, [sound](#) originating from an array of sources (or a spatially distributed source) appears to radiate from a single point.

Fourier transform, Fourier synthesis

A mathematical technique which, although it has varied applications, is referenced in a physical data acquisition context as a method used in the process of deriving a spectrum estimate from time-series data (or the reverse process, termed the inverse Fourier transform). A computationally efficient numerical algorithm for computing the Fourier transform is known as the fast Fourier transform (FFT).

frequency

The rate of oscillation of a periodic function measured in cycles per unit time. The reciprocal of the period. Unit: [hertz \(Hz\)](#). Symbol: *f*. 1 Hz is equal to 1 cycle per second.

frequency weighting

The process of applying a [frequency-weighting function](#).

frequency-weighting function

The squared magnitude of the [sound pressure](#) transfer function (ISO 18405:2017). For [sound](#) of a given [frequency](#), the frequency-weighting function is the ratio of output power to input power of a specified filter, sometimes expressed in decibels. Examples include the following:

- *Auditory frequency-weighting function:* compensatory frequency-weighting function accounting for a species' (or [functional hearing group](#)'s) frequency-specific hearing sensitivity.
- *System frequency-weighting function:* frequency-weighting function describing the sensitivity of an acoustic recording system, which typically consists of a [hydrophone](#), one or more amplifiers, and an analog-to-digital converter.

functional hearing group

Category of animal species when classified according to their hearing sensitivity, hearing anatomy, and susceptibility to [sound](#). For marine mammals, initial groupings were proposed by Southall et al. (2007), and revised groupings are developed as new research/data becomes available. Revised groupings proposed by Southall et al. (2019) include low-frequency cetaceans, high-frequency cetaceans, very high-frequency cetaceans, phocid carnivores in water, other carnivores in water, and sirenians. See [auditory frequency-weighting functions](#), which are often applied to these groups.

Example hearing groups for fish include species for which the swim bladder is involved in hearing, species for which the swim bladder is not involved in hearing, and species without a swim bladder (Popper et al. 2014).

geoacoustic

Relating to the acoustic properties of the seabed.

harmonic

A sinusoidal **sound** component that has a **frequency** that is an integer multiple of the frequency of a sound to which it is related. For a sound with a fundamental frequency of f , the harmonics have frequencies of $2f$, $3f$, $4f$, etc.

hearing threshold

For a given species or **functional hearing group**, the **sound level** for a given **signal** that is barely audible (i.e., that would be barely audible for a given individual in the presence of specified **background noise** during a specific percentage of experimental trials).

hertz (Hz)

Unit of **frequency** defined as one cycle per second. Often expressed in multiples such as kilohertz (1 kHz = 1000 Hz).

high-frequency (HF) cetaceans

See **functional hearing group**. *Note:* The mid- and high-frequency cetaceans groups proposed by Southall et al. (2007) were renamed high- and very-high-frequency cetaceans, respectively, by Southall et al. (2019).

hydrophone

An underwater transducer. A passive electronic device for recording or listening to underwater **sound**.

hydrostatic pressure

The pressure at any given depth in a static liquid that is the result of the weight of the liquid acting on a unit area at that depth, plus any pressure acting on the surface of the liquid. Unit: pascal (Pa).

intermittent sound

A **sound** whose level abruptly drops below the **background noise** level multiple times during an observation period.

impulsive sound

Qualitative term meaning **sounds** that are typically transient, brief (less than 1 s), broadband, with rapid rise time and rapid decay. They can occur in repetition or as a single event. Sources of impulsive sound include, among others, explosives, seismic airguns, and impact pile drivers.

isopleth

A line drawn on a map through all points having the same value of some specified quantity (e.g., sound pressure level isopleth).

knot (kn)

Unit of vessel speed equal to 1 nautical mile per hour.

level

A measure of a quantity expressed as the logarithm of the ratio of the quantity to a specified [reference value](#) of that quantity. For example, a value of [sound pressure level](#) with reference to $1 \mu\text{Pa}^2$ can be written in the form $x \text{ dB re } 1 \mu\text{Pa}^2$.

low-frequency (LF) cetaceans

See [functional hearing group](#).

manual analysis

Human examination of acoustic data via visual review of spectrograms and/or aural inspection of data.

masking

Obscuring of [sounds](#) of interest by other sounds at similar frequencies.

median

The 50th percentile of a statistical distribution.

mid-frequency (MF) cetaceans

See [functional hearing group](#). *Note:* The mid-frequency cetaceans group proposed by Southall et al. (2007) was renamed high-frequency cetaceans by Southall et al. (2019).

monopole source level (MSL)

A [source level](#) that has been calculated using an acoustic model that accounts for the effect of the sea-surface and seabed on [sound](#) propagation, assuming a [point source](#) (monopole). Often used to quantify source levels of vessels or industrial operations from measurements. See also [radiated noise level](#).

multiple linear regression

A statistical method that seeks to explain the response of a dependent variable using multiple explanatory variables.

M-weighting

A set of [auditory frequency-weighting functions](#) proposed by Southall et al. (2007).

mysticete

Member of the Mysticeti, a suborder of [cetaceans](#). Also known as baleen whales, mysticetes have baleen plates (rather than teeth) that they use to filter food from water (or from sediment as for grey whales). This group includes rorquals (Balaenopteridae, such as blue, fin, humpback, and minke whales), right and bowhead whales (Balaenidae), and grey whales (*Eschrichtius robustus*).

N percent exceedance level

The [sound level](#) exceeded N % of the time during a specified time interval. See also [percentile level](#).

non-impulsive sound

Sound that is not an [impulsive sound](#). Not necessarily a [continuous sound](#).

octave

The interval between a [sound](#) and another sound with double or half the [frequency](#). For example, one octave above 200 Hz is 400 Hz, and one octave below 200 Hz is 100 Hz.

odontocete

Member of Odontoceti, a suborder of [cetaceans](#). These whales, dolphins, and porpoises have teeth (rather than baleen plates). Their skulls are mostly asymmetric, an adaptation for their echolocation. This group includes sperm whales, killer whales, belugas, narwhals, dolphins, and porpoises.

other marine carnivores in water (OCW)

See [functional hearing group](#).

parabolic equation method

A computationally efficient solution to the acoustic wave equation that is used to model [propagation loss](#). The parabolic equation approximation omits effects of backscattered [sound](#) (which are negligible for most ocean-acoustic propagation problems), simplifying the computation of propagation loss.

peak sound pressure level (PK), zero-to-peak sound pressure level

The [level](#) (L_{pk}) of the squared maximum magnitude of the [sound pressure](#) (p_{pk}^2) in a stated [frequency band](#) and time window. Defined as $L_{pk} = 10 \log_{10}(p_{pk}^2/p_0^2) = 20 \log_{10}(p_{pk}/p_0)$. Unit: [decibel \(dB\)](#).

[Reference value](#) (p_0^2) for [sound](#) in water: $1 \mu\text{Pa}^2$.

peak-to-peak sound pressure

The difference between the maximum and minimum [sound pressure](#) over a specified [frequency band](#) and time window. Unit: pascal (Pa).

percentile level

The [sound level](#) not exceeded N % of the time during a specified time interval. The N th percentile level is equal to the $(100-N)$ % exceedance level. See also [N percent exceedance level](#).

permanent threshold shift (PTS)

An irreversible loss of hearing sensitivity caused by excessive noise exposure. Considered auditory injury. Compare with [temporary threshold shift](#).

point source

A source that radiates [sound](#) as if from a single point.

propagation loss (PL)

Difference between a [source level](#) (SL) and the level at a specified location, $PL(x) = SL - L(x)$. Unit: [decibel \(dB\)](#).

radiated noise level (RNL)

A [source level](#) that has been calculated assuming [sound pressure](#) decays geometrically with distance from the source, with no influence of the sea-surface or seabed. Often used to quantify source levels of vessels or industrial operations from measurements. See also [monopole source level](#).

received level

The [level](#) of a given field variable measured (or that would be measured) at a given location.

reference value

Standard value of a quantity used for calculating underwater [sound level](#). The reference value depends on the quantity for which the level is being calculated:

Quantity	Reference value
Sound pressure	$p_0^2 = 1 \mu\text{Pa}^2$ or $p_0 = 1 \mu\text{Pa}$
Sound exposure	$E_0 = 1 \mu\text{Pa}^2 \text{s}$
Sound particle displacement	$\delta_0^2 = 1 \mu\text{m}^2$
Sound particle velocity	$u_0^2 = 1 \text{nm}^2/\text{s}^2$
Sound particle acceleration	$a_0^2 = 1 \mu\text{m}^2/\text{s}^4$

shear wave

A mechanical vibration wave in which the direction of particle motion is perpendicular to the direction of propagation. Also called a secondary wave or S-wave. Shear waves propagate only in solid media, such as sediments or rock. Shear waves in the seabed can be converted to [compressional waves](#) in water at the water-seabed interface.

sound

A time-varying disturbance in the pressure, stress, or material displacement of a medium propagated by local compression and expansion of the medium. In common meaning, a form of energy that propagates through media (e.g., water, air, ground) as pressure waves.

sound exposure

Time integral of squared [sound pressure](#) over a stated time interval in a stated [frequency](#) band. The time interval can be a specified time duration (e.g., 24 h) or from start to end of a specified event (e.g., a pile strike, an airgun pulse, a construction operation). Unit: pascal squared second ($\text{Pa}^2 \text{s}$). Symbol: E .

sound exposure level (SEL)

The [level](#) (L_E) of the [sound exposure](#) (E) in a stated [frequency](#) band and time window: $L_E = 10 \log_{10}(E/E_0)$ (ISO 18405:2017). Unit: [decibel \(dB\)](#). [Reference value](#) (E_0) for [sound](#) in water: $1 \mu\text{Pa}^2 \text{s}$.

sound exposure spectral density

Distribution as a function of [frequency](#) of the time-integrated squared [sound pressure](#) per unit [bandwidth](#) of a [sound](#) having a continuous [spectrum](#) (ISO 18405:2017). Unit: pascal squared second per hertz ($\text{Pa}^2 \text{s}/\text{Hz}$).

sound field

Region containing [sound](#) waves.

sound intensity

Product of the [sound pressure](#) and the [sound particle velocity](#) (ISO 18405:2017). The magnitude of the sound intensity is the [sound](#) energy flowing through a unit area perpendicular to the direction of propagation per unit time. Unit: watt per metre squared (W/m^2). Symbol: I .

sound particle acceleration

The rate of change of [sound particle velocity](#). Unit: metre per second squared (m/s^2). Symbol: a .

sound particle velocity

The velocity of a particle in a material moving back and forth in the direction of the pressure wave. Unit: metre per second (m/s). Symbol: u .

sound pressure

The contribution to total pressure caused by the action of **sound** (ISO 18405:2017). Unit: pascal (Pa). Symbol: p .

sound pressure level (SPL), rms sound pressure level

The **level** (L_p) of the time-mean-square **sound pressure** (p_{rms}^2) in a stated **frequency** band and time window: $L_p = 10\log_{10}(p_{rms}^2/p_0^2) = 20\log_{10}(p_{rms}/p_0)$, where rms is the abbreviation for root-mean-square. Unit: **decibel (dB)**. **Reference value** (p_0^2) for **sound** in water: $1 \mu\text{Pa}^2$. SPL can also be expressed in terms of the root-mean-square (rms) with a **reference value** of $p_0 = 1 \mu\text{Pa}$. The two definitions are equivalent.

sound speed profile

The speed of **sound** in the water column as a function of depth below the water surface.

source level (SL)

A property of a **sound** source equal to the **sound pressure level** measured in the **far field** plus the **propagation loss** from the acoustic centre of the source to the receiver position. Unit: **decibel (dB)**. **Reference value**: $1 \mu\text{Pa}^2 \text{m}^2$.

spectrum

Distribution of acoustic signal content over **frequency**, where the signal's content is represented by its power, energy, mean-square **sound pressure**, or **sound exposure**.

surface duct

The upper portion of a water column within which the gradient of the **sound speed profile** causes **sound** to refract upward and therefore reflect repeatedly off the surface resulting in relatively long-range sound propagation with little loss.

temporary threshold shift (TTS)

Reversible loss of hearing sensitivity caused by noise exposure. Compare with **permanent threshold shift**.

thermocline

A depth interval near the ocean surface that experiences larger temperature gradients than the layers above and below it due to warming or cooling by heat conduction from the atmosphere and by warming from the sun.

unweighted

Term indicating that no **frequency-weighting function** is applied.

very high-frequency (VHF) cetaceans

See **functional hearing group**.

wavelength

Distance over which a wave completes one cycle of oscillation. Unit: metre (m). Symbol: λ .

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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 $p_0 = 1 \mu\text{Pa}$. 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 $1 \mu\text{Pa}$) 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:

$$L_p = 10 \log_{10} \left(\frac{1}{T} \int_T g(t) p^2(t) dt / p_0^2 \right) \text{ dB} \quad (\text{A-1})$$

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 $1 \mu\text{Pa}^2 \cdot \text{s}$) is the time-integral of the squared acoustic pressure over a duration (T):

$$L_E = 10 \log_{10} \left(\int_T p^2(t) dt / T_0 p_0^2 \right) \text{ dB} \quad (\text{A-2})$$

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:

$$L_{E,N} = 10 \log_{10} \left(\sum_{i=1}^N 10^{\frac{L_{E,i}}{10}} \right) \text{ dB} . \quad (\text{A-3})$$

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 A.4). 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 i th 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 i th 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 ($f_c(10) = 10 \text{ Hz}$) to band 44 ($f_c(44) = 25 \text{ kHz}$).

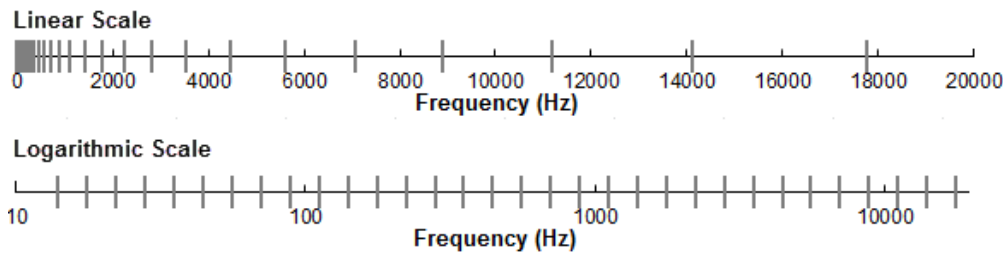


Figure A-1. Decidecade frequency bands (vertical lines) shown on a linear frequency scale and a logarithmic scale.

The sound pressure level in the i th band ($L_{p,i}$) is computed from the spectrum $S(f)$ between $f_{lo,i}$ and $f_{hi,i}$:

$$L_{p,i} = 10 \log_{10} \int_{f_{lo,i}}^{f_{hi,i}} S(f) df \text{ dB} \tag{A-6}$$

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.

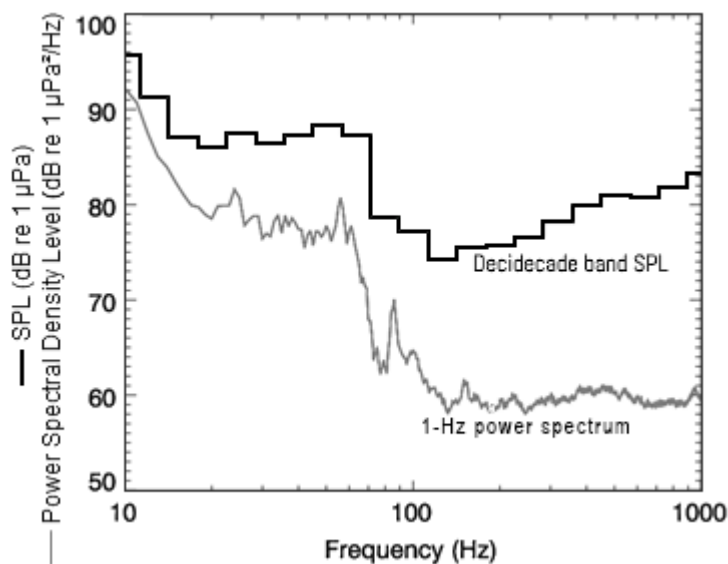


Figure A-2. Sound pressure spectral density levels and the corresponding decidecade band sound pressure levels of example ambient noise shown on a logarithmic frequency scale. Because the decidecade bands are wider with increasing frequency, the decidecade band SPL is higher than the power spectrum.

A.3. Marine Mammal Impact Criteria – Impulsive

It has been long recognised that marine mammals can be adversely affected by underwater anthropogenic noise. For example, Payne and Webb (1971) suggested 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 both injury and disturbance. The following sections summarize the recent development of thresholds; however, this field remains an active research topic.

A.3.1. Injury

In recognition of shortcomings of the SPL-only based 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 acoustic injury criteria for impulsive sounds that included peak pressure level thresholds and $\text{SEL}_{24\text{h}}$ thresholds, where the subscripted 24h refers to the accumulation period for calculating SEL. The peak pressure level criterion is not frequency weighted whereas the $\text{SEL}_{24\text{h}}$ 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 human; Appendix A.3). The $\text{SEL}_{24\text{h}}$ 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 injury 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 $\mu\text{Pa}^2\cdot\text{s}$. 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 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 $\mu\text{Pa}^2\cdot\text{s}$.

As of present, an optimal approach is 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 injury criteria with new thresholds and frequency weighting functions for the five hearing groups described by Finneran and Jenkins (2012). The latest revision to this work was published in 2018; with the criteria defined in NMFS (2018). The latest criteria are from Southall et al. (2019) which is applied in this report.

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).

For impulsive noise, NMFS currently uses step function thresholds of 160 dB re 1 μPa SPL (unweighted) to assess and regulate noise-induced behavioural impacts for marine mammals (NOAA 2018, NOAA 2019). The threshold for impulsive sound is derived from the High-Energy Seismic Survey (HESS) panel (HESS 1999) report that, in turn, is based on the responses of migrating mysticete whales to airgun sounds (Malme et al. 1984). The HESS team recognised that behavioural responses to sound may occur at lower levels, but significant responses were only likely to occur above a SPL of 140 dB re 1 μPa . Southall et al. (2007) found varying responses for most marine mammals between a SPL of 140 and 180 dB re 1 μPa , consistent with the HESS (1999) report, but lack of convergence in the data prevented them from suggesting explicit step functions.

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:

$$G(f) = K + 10 \log_{10} \left[\left(\frac{(f/f_{lo})^{2a}}{[1 + (f/f_{lo})^2]^a [1 + (f/f_{hi})^2]^b} \right) \right] \tag{A-8}$$

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 Southall (2019). 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. 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 Southall et al. (2019).

Hearing group	a	b	f _{lo} (Hz)	f _{hi} (kHz)	K (dB)
Low-frequency cetaceans (baleen whales)	1.0	2	200	19,000	0.13
High-frequency cetaceans (most dolphins, plus sperm, beaked, and bottlenose whales)	1.6	2	8,800	110,000	1.20
Very-high-frequency cetaceans (true porpoises, <i>Kogia</i> , river dolphins, <i>Cephalorhynchus</i> spp., <i>Lagenorhynchus cruciger</i> and <i>L. australis</i>)	1.8	2	12,000	140,000	1.36

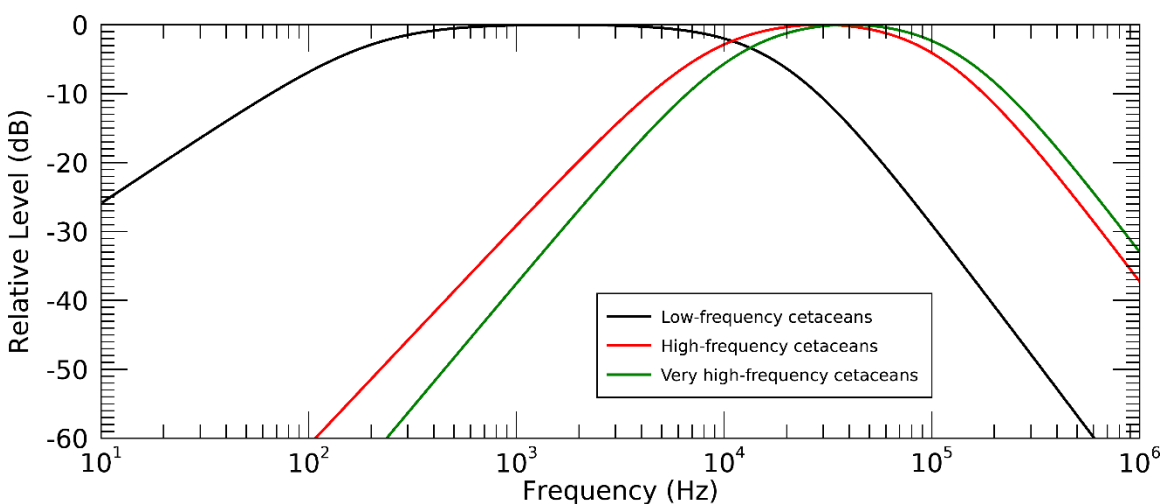


Figure A-3. Auditory weighting functions for functional marine mammal hearing groups used in this project as recommended by Southall et al. (2019).

Appendix B. Acoustic Source Model

B.1. Acoustic Source Model – Pile Driving

B.1.1. Source Properties

For most projects involving pile driving, there is potential for direct transmission from the sound source to biological receivers, and there are reflected sound paths from the water's surface and bottom that may be perceived by marine fauna. Normally, ground-radiated sound is dominated by low frequencies that cannot propagate efficiently through shallow water. When pile driving is the sound source, there is the potential for substrate-borne sound caused by the hammer's action on the pile to be re-radiated back into the water where it may reach a biological receiver. For pile driving, energy transmission through water depends on the following factors (Christopherson and Lundberg 2013):

1. Direct contact between the pile and the water
2. The depth of the water column
3. The size of the pile
4. The type of hammer
5. The hammer energy
6. The addition of re-radiation of substrate-borne sound

The way sound propagates in water is affected by obstructions (barges, breakwater walls, other piles, etc.) and the bathymetric characteristics (Buehler et al. 2015). Figure B-1 illustrates these basic propagation concepts.

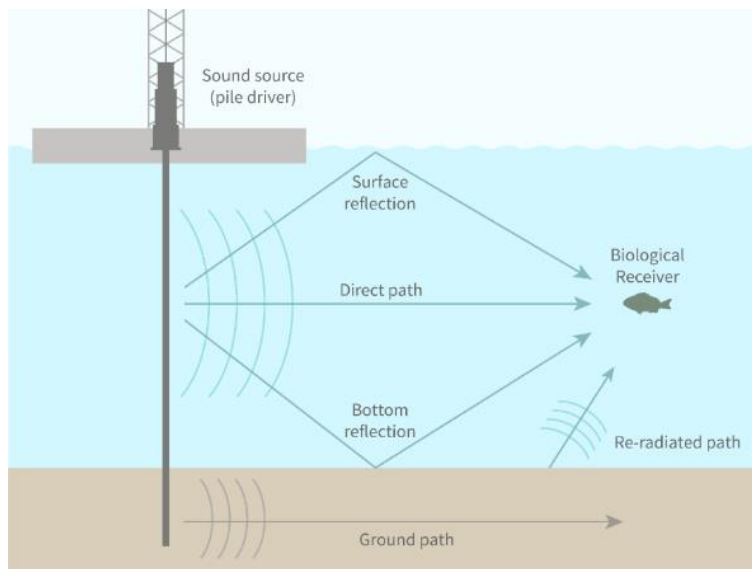


Figure B-1 Underwater sound propagation paths associated with pile driving (Buehler et al. 2015).

B.1.2. Source Model

A physical model of pile vibration and near-field sound radiation is used to calculate source levels of piles. The physical model employed in this study computes the underwater vibration and sound radiation of a pile by solving the theoretical equations of motion for axial and radial vibrations of a

cylindrical shell. These equations of motion are solved subject to boundary conditions, which describe the forcing function of the hammer at the top of the pile and the soil resistance at the base of the pile, as shown in Figure B-2. Damping of the pile vibration due to radiation loading is computed for Mach waves emanating from the pile wall. The equations of motion are discretised using the finite difference (FD) method and are solved on a discrete time and depth mesh.

To model the sound emissions from the piles, the force of the pile driving hammers also had to be modelled. The force at the top of each pile was computed using the GRLWEAP 2010 wave equation model (GRLWEAP, Pile Dynamics 2010), which includes a large database of simulated hammers—both impact and vibratory—based on the manufacturer’s specifications. The forcing functions from GRLWEAP were used as inputs to the FD model to compute the resulting pile vibrations.

The sound radiating from the pile itself is simulated using a vertical array of discrete point sources. The point sources are centred on the pile axis. Their amplitudes are derived using an inverse technique, such that their collective particle velocity, calculated using a near-field wave-number integration model, matches the particle velocity in the water at the pile wall. The sound field propagating away from the vertical source array is then calculated using a time-domain acoustic propagation model (FWRAM, Appendix C.3). MacGillivray (2014) describes the theory behind the physical model in more detail.

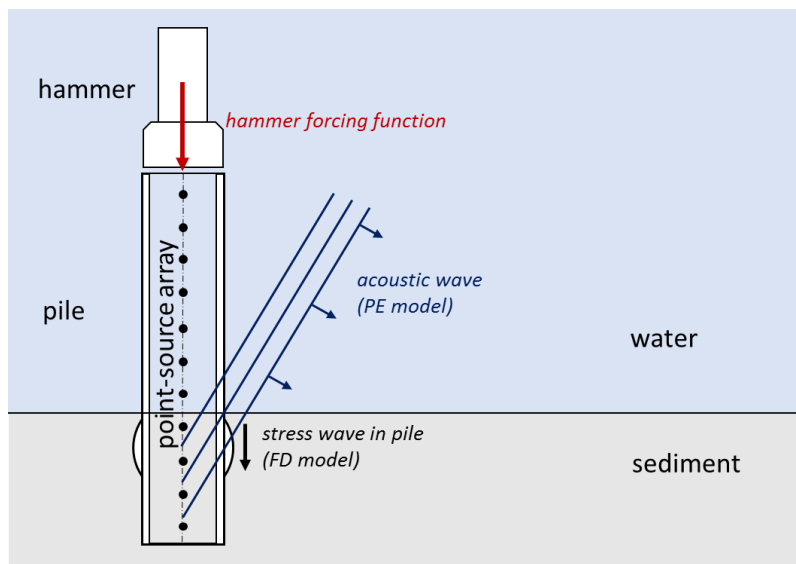


Figure B-2. Physical model geometry for impact driving of a cylindrical pile (vertical cross-section). The hammer forcing function is used with the finite difference (FD) model to compute the stress wave vibration in the pile. A vertical array of point sources is used with the parabolic equation (PE) model to compute the acoustic waves that the pile wall radiates.

Appendix C. Sound Propagation Models

C.1. Environmental Parameters

C.1.1. Bathymetry

Bathymetry throughout the modelled area was extracted from the High-resolution depth model for the Bass Strait (Beaman 2022), a 0.0003° grid rendered for the Bass Strait (equivalent to approximately 30 m resolution). Bathymetry data were re-gridded onto a Map Grid of Australia (MGA) coordinate projection (Zone 55) with a regular grid spacing of 250 m × 250 m resolution (Figure C-1).

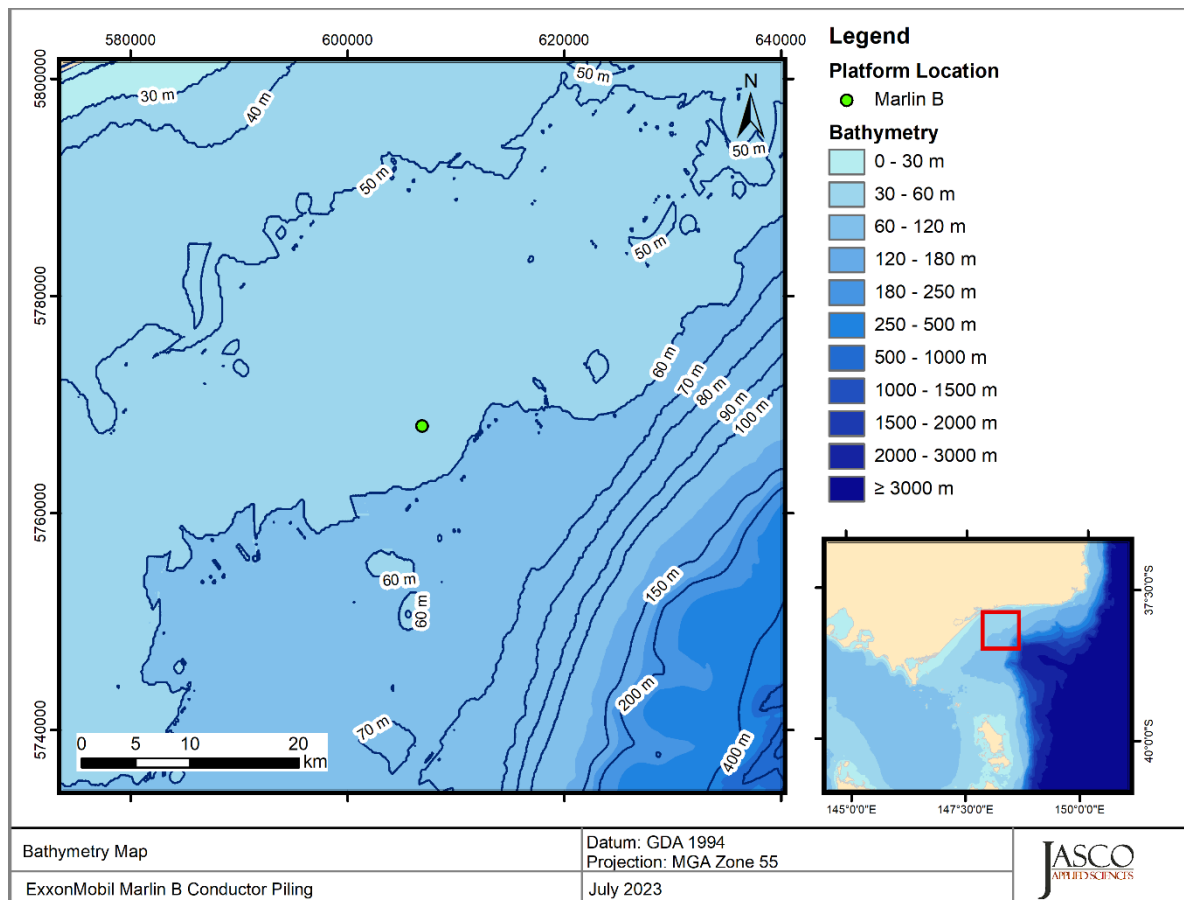


Figure C-1. Bathymetry of the region and the piling locations.

C.1.2. Sound Speed Profile

The sound speed profiles for the modelled sites were derived from temperature and salinity profiles from the US 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 US 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 within a 100 km box radius encompassing the modelling area. To determine the sound speed profile that is expected to be most favourable to longer-range sound propagation during the proposed survey time frame, each month was modelled for each area and the ranges were compared. As such, June was selected to as part of a conservative approach to estimate distances to received sound level thresholds. Figure C-2 shows the resulting profile used as an input to the sound propagation modelling.

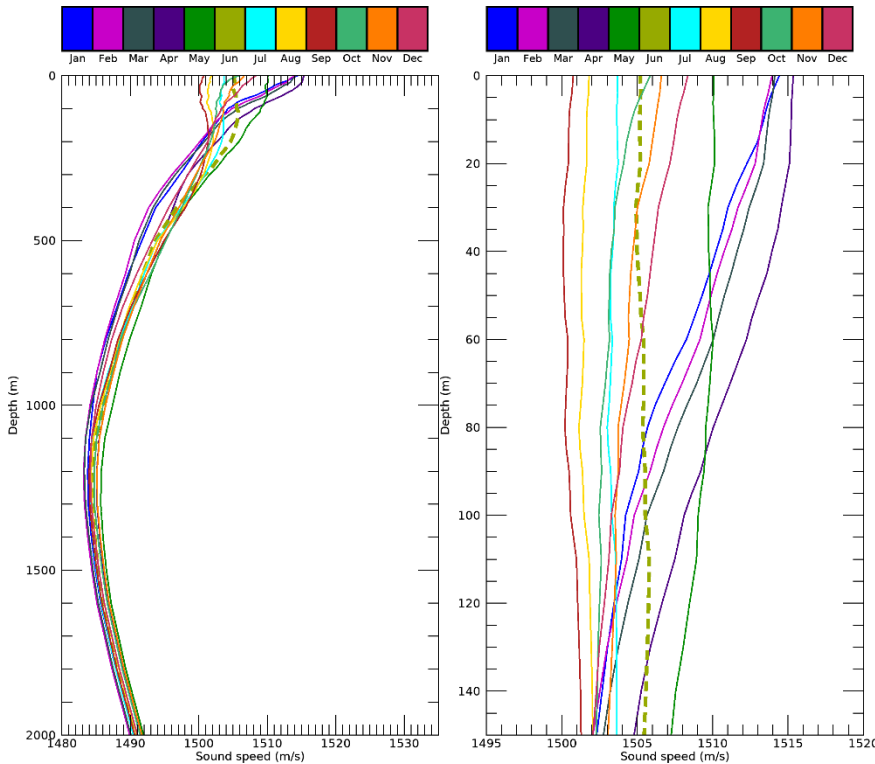


Figure C-2. The modelling sound speed profile corresponding to June: full profile (left) and top 150 m (right) Profiles are calculated from temperature and salinity profiles from Generalized Digital Environmental Model V 3.0 (GDEM; Teague et al. 1990, Carnes 2009).

C.1.3. Geoacoustics

The propagation model used in this study considered a single geoacoustic profile for all modelling. This profile determines how sound is reflected from the seabed, as well as how it is transmitted, reflected, and absorbed into the sediment layers. The geology in the area was generated by boreholes from Holdgate et al. (2003) and Mitchell et al. (2007). These boreholes extended approximately 100 m below the seafloor. From these data, the seabed geologic profile within the vicinity of the Marlin B generally consists of unconsolidated sediments with some weakly cemented interbedded limestones. For the sediment layers, representative grain sizes and porosities were used in the grain-shearing model proposed by Buckingham (2005) to estimate the geoacoustic parameters required by the sound propagation models. Table C-1 presents the geoacoustic profile used for modelling of pile driving at the Marlin B well.

Table C-1. Geoacoustic profile at the Marlin B platform location

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)
0–10	Medium Carbonate Sand	2.0736	1643.2-1917.2	0.109-1.051	458.8	3.653
10-20	Medium fine carbonate sand	2.0663	1875.7-1956.8	0.950-1.169		
20-40	Medium fine carbonate sand intermixed with limestone	2.0663	1956.8-2064.8	1.169-1.422		
40-60	Medium fine sand	2.0663	2064.8-2144.0	1.422-1.584		
60-80	Consolidated Fine sand	2.0561	2070.7-2127.0	1.453-1.567		
80-100		2.0561	2127.0-2175.5	1.567-1.659		

C.2. Propagation Loss

The propagation of sound through the environment can be 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 ($L_{S,E}$), expressed in dB re 1 $\mu\text{Pa}^2\text{m}^2\text{s}$, and energy propagation loss (PL_E), in units of dB, at a given frequency are known, then the received level ($L_{E,p}$) at a receiver location can be calculated in dB re 1 $\mu\text{Pa}^2\text{s}$ by:

$$L_{E,p}(\theta, r) = L_{S,E}(\theta) - PL_E(\theta, r), \quad (\text{C-1})$$

where θ defines the specific direction, and r is the range of the receiver from the source.

C.3. Full Waveform Range-dependent Acoustic Model: FWRAM

For impulsive sounds from impact pile driving, time-domain representations of the pressure waves generated in the water are required for calculating SPL and peak pressure level. Furthermore, the pile must be represented as a distributed source to accurately characterise vertical directivity effects in the near-field zone.

For this study, synthetic pressure waveforms were computed using the Full Waveform Range-dependent Model (FWRAM), which is a time-domain acoustic model based on the wide-angle parabolic equation (PE) algorithm (Collins 1993). FWRAM computes synthetic pressure waveforms versus range and depth for range-varying marine acoustic environments, and it takes bathymetry, water sound speed profile, and seabed geoacoustic profile, as environmental inputs. FWRAM computes pressure waveforms via Fourier synthesis of the modelled acoustic transfer function in closely spaced frequency bands.

FWRAM employs the array starter method to accurately model sound propagation from a spatially distributed source (MacGillivray and Chapman 2012). Synthetic pressure waveforms were modelled over the frequency range 10 – 1024 Hz, inside a 1 s window. These waveforms are post-processed,

after applying a travel time correction, to calculate standard SPL and SEL metrics versus range and depth from the source.

C.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 C-3).

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 C-3(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 C-3(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.

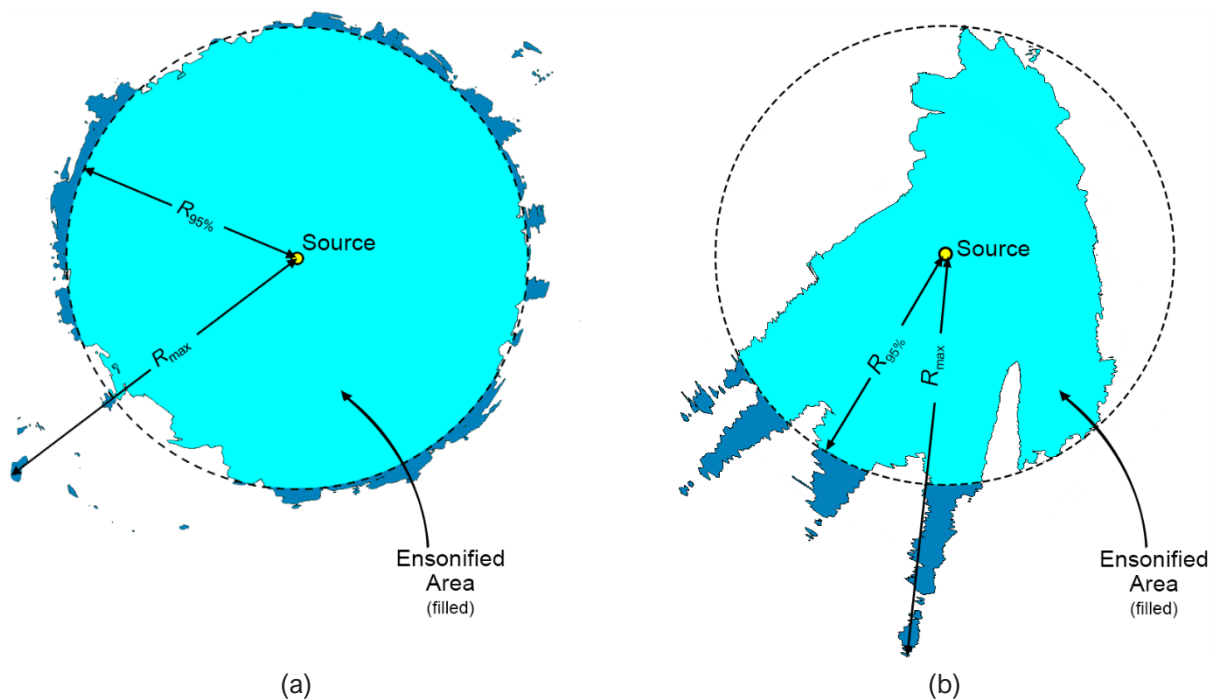


Figure C-3. Sample areas ensonified to an arbitrary sound level with R_{max} and $R_{95\%}$ ranges shown for two scenarios. (a) Largely symmetric sound level contour with small protrusions. (b) Strongly asymmetric sound level contour with long protrusions. Light blue indicates the ensonified areas bounded by $R_{95\%}$; darker blue indicates the areas outside this boundary which determine R_{max} .

C.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 Arctic, Canadian and southern United States waters, Greenland, Russia and Australia (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).

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).