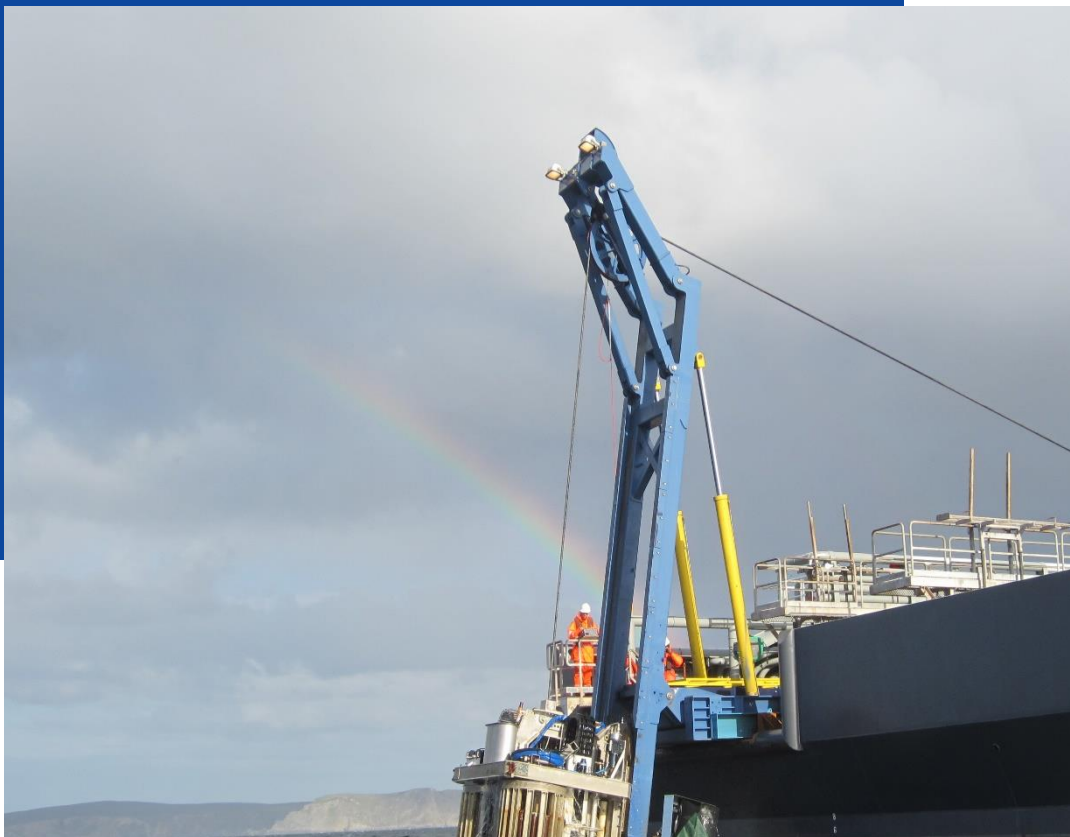


ENVIRONMENT PLAN



GIPPSLAND BASIN GEOPHYSICAL AND GEOTECHNICAL INVESTIGATIONS



ExxonMobil



Esso Australia Resources Pty Ltd acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land and acknowledges and pays respect to their Elders, past and present. Esso Australia Resources Pty Ltd is committed to safe and inclusive workplaces, policies and services for people of LGBTIQ+ communities and their families.

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The Document Administrator is responsible for maintaining and controlling changes to this document in accordance with the Document Management Manual.

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LIST OF ATTACHMENTS

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ATTACHMENT 2: G&G Emergency Preparedness and Response Plan (AUGO-SF-EBP-002) includes Oil Pollution Emergency Plan (AUGO-EV-ELI-001) and Bass Strait Operational and Scientific Monitoring Program (AUGO-EV-EPL-001)

ABBREVIATIONS

Abbreviation	Definition
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
DAFF	Department of Agriculture Fisheries and Forestry
DCCEEW	Department of Climate Change, Energy, the Environment and Water
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

Abbreviation	Definition
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
GHG	Greenhouse Gas
GoM	Gulf of Mexico
HCTS	Habitat Critical To Survival
HFC	High-frequency cetaceans
HLV	Heavy Lift vessel
HP	High Pressure
HRG	High-resolution geophysical
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
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

Abbreviation	Definition
MEPC	Marine Environment Protection Committee
MLB	Marlin B
MNES	Matters of National Environmental Significance
MOC	Management of Change
MODU	Mobile Offshore Drilling Unit
NaCl	Sodium chloride
NSW	New South Wales
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
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

Abbreviation	Definition
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
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
bbl	Standard barrel
dB	Decibel
g	Gram
Hz	Hertz

Abbreviation	Unit
kg	Kilogram
kHz	kiloHertz
km	Kilometre
km ²	Square kilometre
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 425 wells, 19 offshore platforms and six subsea facilities that are inter-connected by over 800 kilometres (km) 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% of all of Eastern Australia's natural gas, hence contributing significantly to the national economy and supporting growth in industry and employment. Whilst 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 2030.

Esso plans to continue to undertake geophysical and geotechnical (G&G) investigations (the activity) across multiple licence areas located within Commonwealth marine waters of the Gippsland Basin in Bass Strait (Figure 3-1).

The G&G investigations are required to inform a number of prospective future developments in the Gippsland basin. These include:

- development of new and existing gas fields
- development around existing facilities
- plug and abandonment (P&A)
- decommissioning
- drilling.

This Environment Plan (EP) has been prepared as a five yearly revision to the in-force G&G EP and in accordance with the requirements of the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) and the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* (OPGGS (Environment) Regulations), specifically regulation 39(2). The development of this EP has been guided by N04750-GN1344 Environment Plan content requirement guidance note (NOPSEMA, 2024).

1.1 Scope

Esso has developed this EP to manage the environmental impacts and risks associated with G&G investigations. The activities can occur within any of the Esso license areas as shown in Figure 3-1.

When activities are being performed, an Operational Area (OA) will be established. The OA is defined by the 500 metre (m) radius around the vessel undertaking the G&G activity, while the activity is taking place at that location. Activities included in the scope of this EP are described in detail in Chapter 2.

Activities excluded from the scope of this EP are vessels transiting to or from the OAs. During transit, the vessels operate under the *Commonwealth Navigation Act 2012* and are not performing a petroleum activity.

The activity (as defined in Regulation 5 OPGGS (Environment) Regulations) is defined as:

The physical collection of geophysical and geotechnical data, from the time that the vessel(s) first deploys equipment within the OA, until the time the vessel(s) retrieves the equipment and departs the activity area for the last time.

This EP has been prepared in accordance with the OPGGS (Environment) Regulations for assessment and acceptance by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

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/L02, VIC/L03, VIC/L04, VIC/L05, VIC/L06, VIC/L07, VIC/L08, VIC/L09, VIC/L10, VIC/L11, VIC/L13, VIC/L14, VIC/L15, VIC/L16, VIC/L17, VIC/L18, VIC/L19, VIC/L20 and VIC/L25 (as shown in Figure 2-1).

The nominated registered office for the proponent is as follows:

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Level 9, 664 Collins Street, Docklands VIC 3008

The environmental contact for this activity is:

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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 (nm) to the outer extent of the Australian Exclusive Economic Zone at 200nm 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 (NSW) 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 state waters (between the low water mark and the 3nm limit) and as such, no environmental approvals for the activity are required from the Victorian State government. However, the state legislation would be relevant in the case of a large hydrocarbon release, as the Environment that May Be Affected (EMBA) intersects Victorian, NSW and Tasmanian state waters (see Section 3). Legislation relevant to marine pollution in Victoria, NSW and Tasmania is detailed in Table 1-2.

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 ensure 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>Environment 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>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC)	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.	Relevant MNES are covered in Appendix A . EPBC Act Protected Matters Search Tool (PMST) is utilised to identify relevant data. Approved conservation advice and management plans relating to listed species or threatened ecological communities have been identified and	1992 Convention on Biological Diversity & Agenda 21. Convention on International Trade in Endangered Species of Wildlife and Flora 1973. Japan/Australia Migratory Bird Agreement 1974. China/Australia Migratory Bird Agreement 1986.	Department of Climate Change, Energy, the Environment and Water (DCCEEW) For petroleum activities in Commonwealth Waters, NOPSEMA

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
	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 authorisation process under Part 10, Section 146 of the EPBC Act.	considered where appropriate.	<p>Republic of Korea-Australia Migratory Bird Agreement 2006.</p> <p>International Convention on Whaling 1946.</p> <p>Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention).</p> <p>Convention Concerning the Protection of the World Cultural and Natural Heritage 1972.</p>	
<i>Environment Protection (Sea Dumping) Act 1981</i>	Act prevents the deliberate disposal of wastes (loading, dumping, and incineration) at sea from vessels, aircraft, and OAs.	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>Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention).</p> <p>International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL).</p>	DCCEEW

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
<i>Australian Maritime Safety Authority Act 1990</i>	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).	Oil spill preparedness and response plans for dealing with a potential worst case scenario spill is described in Section 8.14 including consultation and coordination of activities with AMSA.	International Convention on Oil Pollution Preparedness, Response and Co-operation) 1990.	AMSA
<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</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	Reporting of emissions required by the National Pollutant Inventory is conducted annually for all Esso		National Environment Protection Council

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
<i>(Implementation) Act 1998</i>	Environment Pollution Measures such as National Pollutant Inventory.	operated activities covered by this EP.		
<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
<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 & the Biosecurity Amendment (Biofouling Management) Regulations</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</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

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
	force on the 15 June 2022 and requires that vessel operators provide information on biofouling management practices prior to arriving in Australia.			
<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, activities relating to control of discharges are discussed in this EP.	MARPOL (certain sections). Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGs).	Department of Infrastructure, Transport, Regional Development, 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	International Convention on the Control of Harmful Anti-fouling Systems on Ships 2001.	AMSA

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
		appropriate antifouling systems.		
<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 a submerged aircraft or associated artefacts in Commonwealth waters requires a permit.	There are no known shipwrecks, relics, submerged aircraft or associated artefacts relevant to this EP.		DCCEEW
<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	Chicago Convention 1944.	CASA

Legislation	Coverage and applicability to activity	Enacted by	International Convention enacted	Administering authority
		environmental impacts as described in this EP.		

Table 1-2 Key Victorian legislation

Legislation	Coverage
<i>Environment Protection Act 2017 (Vic)</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.
<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.

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

Table 1-3 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.

Legislation	Coverage
<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.

Table 1-4 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</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</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</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</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</i>	This Act provides for the protection and management of marine areas. Administered by the New South Wales Marine Parks Authority.

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 peoples' 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 200m 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

The EP Summary in Table 1-5 is included line with the requirement of Regulation 35(7) of the OPGGS (Environment) Regulations.

Table 1-5 Environment Plan summary

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 8.9
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

Esso plans to continue to undertake G&G investigations within existing production licence and retention lease areas. The investigations will consist of a number of individual campaigns to inform a number of prospective future activities in the Gippsland basin. These include:

- development of new and existing gas fields
- development around existing facilities
- plug and abandonment
- decommissioning
- drilling.

2.1 Location

The activity will take place in Production Licences VIC/L01, VIC/RL1, VIC/L02, VIC/L03, VIC/L04, VIC/L05, VIC/L06, VIC/L07, VIC/L08, VIC/L09, VIC/L10, VIC/L11, VIC/L13, VIC/L14, VIC/L15, VIC/L16, VIC/L17, VIC/L18, VIC/L19, VIC/L20, and VIC/L25 (as shown in Figure 2-1), located in the Gippsland Basin of the eastern Bass Strait.

Activities can occur anywhere within each license area but most likely will be close to the existing facilities.

- Activity Area – the area encompassing Esso's licences within the Gippsland Basin where G&G investigations are proposed. The activity area is 4,341km² and is shown in Figure 3-1 and described in Section 3.2
- Operational Area (OA) – The 500m radius around each vessel where the individual activity will take place (at any specific location within the activity area).

Activities will mostly be undertaken within and nearby the Bass Strait Area To Be Avoided (ATBA). Ships in excess of 200 gross tonnes 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 Petroleum Safety Zone (PSZ). The approximate size of the ATBA is 5,362km². The ATBA is described in the Mariner's Handbook for Australian Waters (AHP20) and marked on charts ENC AU240140/PNC Aus 357.

2.2 Timing of the activities

The G&G investigations may be undertaken at any time during the life of this EP, being five years from the date of acceptance from NOPSEMA. A further revision to this EP may also be required after the five-year expiration of this EP, commensurate with the ongoing nature of Bass Strait operations and decommissioning.

G&G survey campaigns are typically 20-60 days in duration, with a maximum duration of geotechnical and geophysical campaigns to be no more than a combined total of 180 days per calendar year.

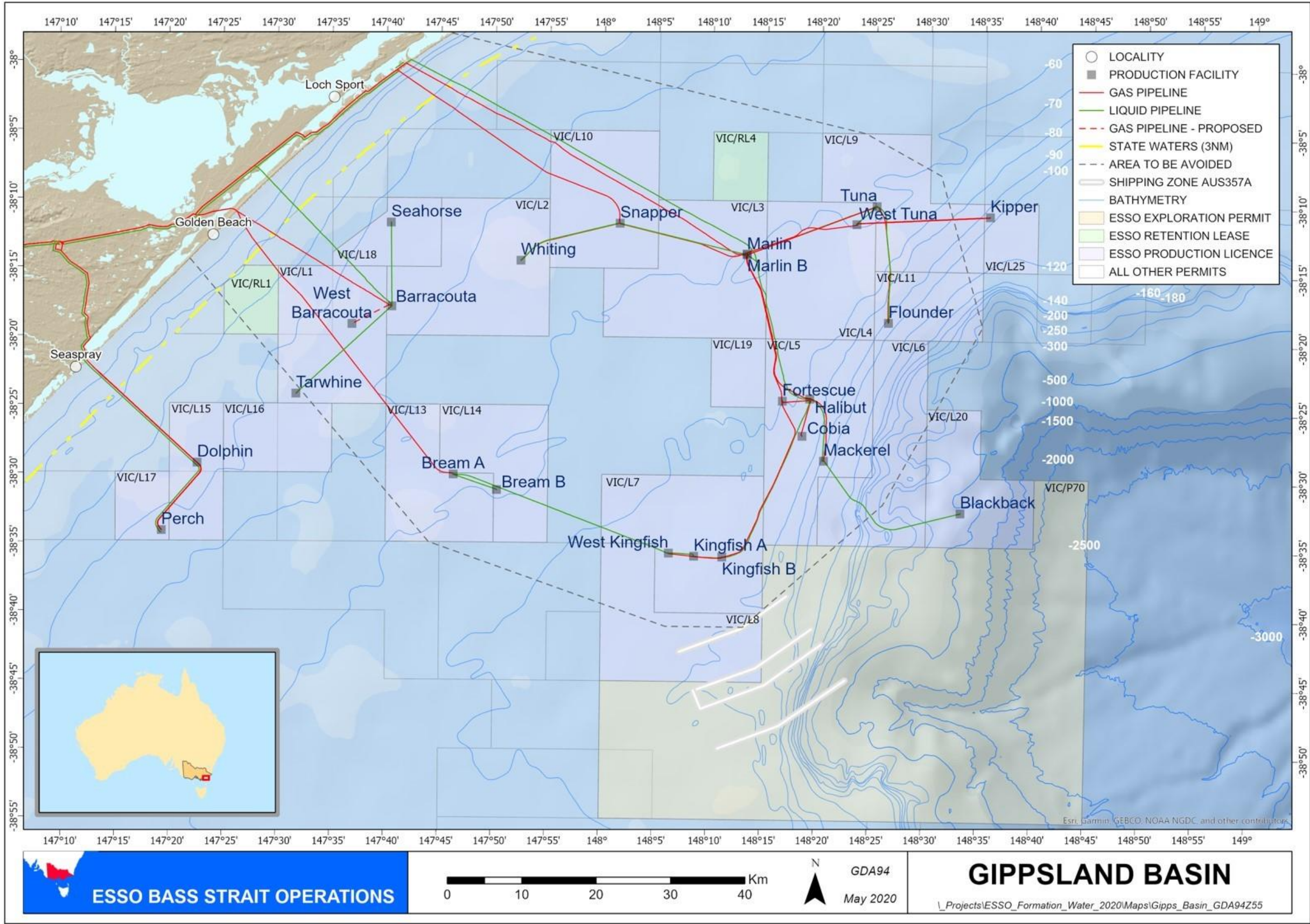


Figure 2-1 Licence areas subject to G&G activities, Gippsland Basin

Table 2-1 Licence locations

Licence	Latitude S	Longitude E
VIC/L01	38° 19' 54.50"	147° 35' 04.60"
VIC/RL01	38° 17' 30.44"	147° 27' 40.16"
VIC/L02	38° 15' 24.49"	147° 48' 34.59"
VIC/L03	38° 15' 24.47"	148° 08' 34.57"
VIC/L04	38° 14' 54.47"	148° 20' 04.56"
VIC/L05	38° 26' 24.47"	148° 19' 34.57"
VIC/L06	38° 27' 24.46"	148° 27' 34.57"
VIC/L07	38° 34' 24.48"	148° 08' 34.59"
VIC/L08	38° 42' 24.48"	148° 07' 34.60"
VIC/L9	38° 09' 54.46"	148° 27' 34.55"
VIC/L10	38° 09' 54.48"	148° 00' 04.58"
VIC/L11	38° 17' 24.46"	148° 30' 04.56"
VIC/L13	38° 32' 24.26"	147° 45' 04.61"
VIC/L14	38° 27' 24.49"	147° 50' 04.60"
VIC/L15	38° 29' 54.51"	147° 22' 34.62"
VIC/L16	38° 27' 24.50"	147° 30' 04.61"
VIC/L17	38° 32' 24.52"	147° 17' 34.63"
VIC/L18	38° 12' 46.49"	147° 41' 04.61"
VIC/L19	38° 22' 24.47"	148° 12' 34.58"
VIC/L20	38° 32' 24.26"	148° 35' 04.56"
VIC/L25	38° 12' 24.46"	148° 37' 34.54"

2.3 Geophysical Investigations

Geophysical investigations include the systematic collection of geophysical data (i.e. measurements of seabed characteristics, imaging, and profiling) for assessment of water depths, seabed topography, seabed conditions and identification of obstructions on the seabed. Geophysical investigations are proposed to be undertaken using the following conventional techniques:

- single beam echo sounder (SBES)
- multi beam echo sounder (MBES)
- side scan sonar (SSS)
- sub bottom profiler (SBP) including Ultra high resolution (UHR)
- magnetometer/gradiometer system
- sound velocity profiler (SVP)
- pipe tracking system (PTS)
- subsea photogrammetry.

As noted by the Australian Offshore Infrastructure Regulator (OIR) and supported by international peer reviewed scientific publications (Ruppel, Weber, Staaterman, Labak, & Hart, 2022) (Reiser, Funk, Rodrigues, & Hannay, 2011) (Zykov, Bailey, Deveau, & Racca, 2013), geophysical investigations generate data using much lower intensity sources that generate much lower sound levels than marine seismic surveys (OIR, 2023).

A simplified pictorial representation of geophysical investigation techniques is provided in Figure 2-2. Table 2-2 describes the methods listed above in more detail.

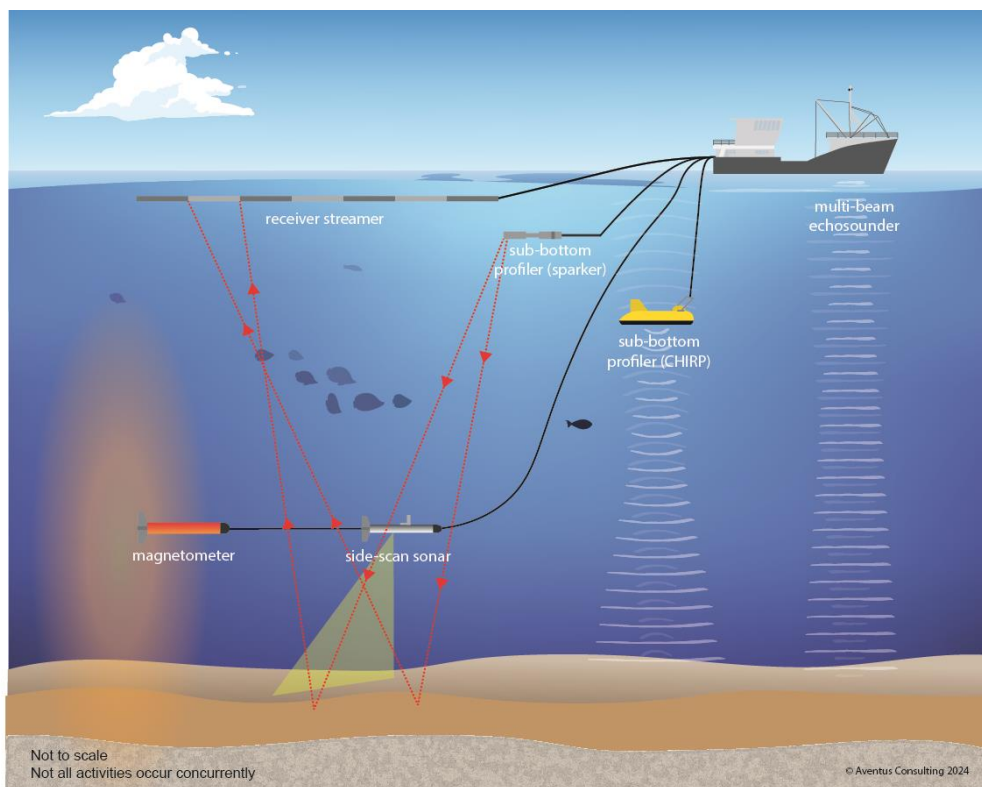


Figure 2-2 Typical geophysical investigation techniques

Table 2-2 Description of geophysical investigation techniques

Purpose/function	Method	Technical specifications
SBES		
The SBES acquires data primarily relating to depth at site locations.	<p>SBES, like other sonar systems, transmit sound energy and analyse the return signal (echo) from the seabed or other objects. The sound waves are transmitted from a transducer mounted on the vessel hull to produce single line coverage of the seabed.</p> <p>SBES works on a single sound pulse in a single narrow beam and can only measure one point per echo. SBES may use various sonar frequencies; typically, 200kHz is used in shallow water under 100m. SBES are especially useful in very shallow water, under 5-10m deep.</p> <p>This type of survey will use a single beam echo sounder with a frequency range between 30 – 210kHz.</p>	<p>Typical dimensions are 30 x 25 x 13.8cm, weighing approximately 3.52kg (CEE HydroSystems, 2021).</p> <p>The maximum source levels are typically 180 – 230dB re 1µPa @ 1m with 1 – 30 cycles (CEE HydroSystems, 2021).</p>
MBES		
The MBES investigation will acquire detailed measurements of water depth, seabed roughness and hardness in the activity area. The data will be used to create a high-resolution bathymetric map.	<p>MBES is similar to SBES except that coverage on the seabed is wider than a single beam and typically in the order of 3-12 times the water depth.</p> <p>A MBES acquires a wide swath (strip) of bathymetry data perpendicular to the vessel track and provides full seabed coverage with no gaps between vessel tracks. MBES systems are available for all water depths between 3m and 11,000m.</p> <p>A MBES transmits a broad acoustic pulse from a transducer over a swath across track. The MBES then forms a series of received beams that are each much narrower and form a 'fan' (with a half-angle of 30-60°) across the seabed, perpendicular to the vessel track. The transducer(s) then 'listen' for the reflected energy from the seabed. In general, if all other parameters are constant, a rougher surface will backscatter more energy than a smooth surface and therefore, return higher amplitude signals.</p> <p>Collecting the fan of received beams establishes the two-way travel time of the acoustic pulse from which the water depth is calculated, using the velocity of</p>	<p>They typically measure 48 x 11 x 19cm and weigh up to 13kg (Photo 2-1).</p> <p>MBES operate over a range of frequencies, with a typical MBES operating between 200–700kHz (classified as high frequency).</p> <p>The maximum source levels are about 236–242dB re 1 µPa @ 1m for the 1° and 2° beams (DoC, 2016). For this program, the maximum source level is estimated to be 218dB re 1µPa @ 1m.</p> <p>A typical unit would be the Kongsberg EM 2040 or similar.</p>

Purpose/function	Method	Technical specifications
	<p>seawater. The fans of seabed coverage produce a series of strips along each track, which are lined up, side-by-side to generate two dimensional (2D) geo-referenced bathymetric maps of the seabed. The width of each strip depends on water depth and the acquisition system.</p> <p>MBES systems are usually hull mounted, pole mounted or ROV mounted due to the accurate positioning for data collection.</p> <p>The MBES equipment is generally operated at a speed of 3-4 knots (5.5–7.4km/hr).</p>	
SSS		
<p>Detects seabed hazards such as existing pipelines, shipping containers, boulders, debris, marked/unmarked wrecks, reefs, and craters</p>	<p>The SSS method of surveying generates oblique acoustic images of the seabed by towing a sonar 'tow-fish'. The tow-fish is provided with power and digital telemetry services and towed from the vessel using a reinforced or armored tow cable.</p> <p>The tow-fish is equipped with a linear array of transducers that emit, and later receive, an acoustic energy pulse in a specific frequency range. Typically, a dual-channel, dual-frequency SSS is used.</p> <p>The acoustic energy received by the SSS tow-fish provides information as to the general distribution and characteristics of the surficial sediment and outcropping strata. Shadows result from areas of no energy return, such as shadows from large boulders or sunken ships, and aid in interpretation of the sonogram image.</p> <p>The resultant SSS image is created by assembling each swathe of data into a georeferenced composite that represents the acoustic character of the seabed within the activity area. All data is digitally recorded and allows for a geo-referenced mosaic of the data so that a digital model of the seabed can be created.</p> <p>A single cable tow with the SSS (and magnetometer, see later in this table) in a piggyback configuration with the SSS ahead of the magnetometer. The SSS will typically be about 20m from the stern of the vessel and magnetometer will be 10m behind the SSS.</p>	<p>The tow-fish is constructed of stainless steel and is a cylindrical torpedo-like device, typically weighs ~1.2m long that weighs 18kg in the air (12kg in the water) and can be operated by one person (Photo 2-2).</p> <p>SSS systems typically operate at dual frequencies:</p> <ul style="list-style-type: none"> • A low frequency of about 100-120kHz (with a swath range of 150-200m). • A high frequency mostly of 400kHz to 600kHz is utilized (with a swath range of 50-100m or more). <p>Based on the equipment selection, the maximum source level for this activity is expected to be 235dB re 1µPa @ 1m.</p> <p>Acoustic pulse rate shot is a few times per second with consequent along-track</p>

Purpose/function	Method	Technical specifications
	<p>The cable will be towed 10-15m above the seabed at a distance of about 150 - 200m behind the vessel, at speed of ~4 knots. SSS are typically towed or ROV mounted offshore. SSS may be pole mounted in shallow waters.</p> <p>The SSS is towed and operated at the same time as the MBES.</p>	resolution of ~1m depending on the frequency and settings used.
SBP		
<p>A SBP is used to investigate the layering and thickness of the uppermost seabed sediments (shallow geology).</p>	<p>There are several different types of SBP, which exhibit a trade-off between resolution and depth of penetration based on the frequency of the acoustic signal. SBP are used to survey the shallow geology of an area, and as such are considerably lower in acoustic energy output compared to other geological survey techniques such as exploration seismic surveys using airgun arrays. Acoustic emissions from SBPs are typically in the frequency range of 0.05 to 12kHz, with peak sound pressure level (SPL) of up to 225dB re 1µPa @ 1m.</p> <p>No air guns will be used during the geophysical survey.</p> <p>SBP will be conducted hull mounted, pole mounted, ROV mounted, or towed with up to 50-100m streamer (dependent of type of SBP used).</p> <p>The two systems proposed for use in these types of campaign are described below.</p> <p>The SBP system is usually operated at the same time as the MBES and SSS.</p>	<p>Dimensions are generally 100cm (L) x 67cm (W) x 40cm (H), weighing up to 76kg in air.</p> <p>(32 kg in water) (Photo 2-3).</p>
	Use of UHR will provide higher definition of the subsea layers without loss of resolution.	Operational frequency ranges from 1 – 13kHz (Cunha & Ayres Neto, 2021).
	<p>Compressed High-Intensity Radar Pulse (CHIRP)</p> <p>Very high frequency systems including pingers, parametric echo sounding and Compressed High-Intensity Radar Pulse (CHIRP).</p> <p>Traditional SBPs utilise single frequency fixed length “pinger” type pulses, while the CHIRP system emits a sweep of frequency signals (transmitted electromagnetic signal over a period of time).</p>	<p>This system utilizes an FM signal across a full range of frequencies, typically 2-1 kHz.</p> <p>The maximum source levels of a CHIRP are about 200-205dB re 1µPA @ 1m (DoC, 2016). For this program, the maximum source level is estimated to be 218dB re 1µPa @ 1m.</p>

Purpose/function	Method	Technical specifications
	<p>CHIRP systems usually employ various types of transducers as the source. The transducer that emits the acoustic energy also receives the reflected signal.</p> <p>CHIRP signals typically penetrate only about 5-10m into the seabed (depending on shallow seabed geology) and provide the best resolution, but lowest penetration of all three options. The beam width is usually between 15° and 55°. CHIRP system transducers are usually circular and point downwards.</p>	
	<p>Sparkers or Boomers</p> <p>Sparkers are sources that create an electric arc between electrodes with a high voltage energy pulse. The arc momentarily vaporises water in a localised volume and the vapour expands, generating a pressure wave.</p> <p>The Boomer Plate is an electro- mechanical transducer comprising an insulated electrical coil adjacent to a metal plate, the movement of which creates an acoustic pulse.</p> <p>Boomer or Sparker systems consist of two spatially separated units; a hull mounted transmitter (Boomer plate or Sparker array) and a receiver (hydrophone equipment). A shipboard power supply generates an electrical pulse which is discharged to the electrical coil causing a magnetic field to repel a metal plate. This energetic motion generates a broad band, high amplitude impulsive acoustic signal in the water column that is directed vertically downward.</p> <p>Sparkers can use the same capacitor bank as boomers. Boomer and sparker systems provide low-resolution data to a much greater penetration depth below the seabed, generally a minimum depth of 30m below the mud line, depending on the shallow seabed geology. The signals generated by these systems are received on a streamer of receivers towed behind the vessel.</p> <p>The receiver for the boomer or sparker systems is a hydrophone or hydrophone array consisting of a string of individual elements located within a neutrally buoyant synthetic hydrocarbon filled tubing or a solid streamer. They typically contain 8 to 12 hydrophone elements evenly spaced in a tube that is 2.5 to 4.5m in length and</p>	<p>The generated frequencies generally range from 0.4kHz to 1.2kHz.</p> <p>The sound source level is typically between 215 and 225dB re 1µPa @ 1m. For this program, the maximum source level is estimated to be 218dB re 1µPa @ 1m.</p>

Purpose/function	Method	Technical specifications
	<p>25mm in diameter. The cable may be wholly solid-state or filled with approximately 5 litres of hydrophone fluid.</p> <p>The SBP CHIRP together with a surface towed boomer/sparker can be used for acquisition of shallow geological data, usually to a depth of 50-200m below the seabed. SBP can either be hull mounted or towed at a distance of 50 – 100m from the vessel depending on conditions and vessel capability.</p>	
Magnetometer / Gradiometer		
<p>This equipment detects metallic objects on or below the seabed (i.e. buried pipelines, petroleum wellheads, shipwreck debris and dropped objects such as unexploded ordinance, cables, anchors, chains) that may not be identified by using acoustic means.</p> <p>Magnetometers are generally towed as standalone units where Gradiometers compose of a frame and a combination of multiple magnetometers.</p>	<p>A magnetometer sensor is housed in a tow-fish and is towed as close to the seabed as possible and sufficiently far away from the vessel to isolate the sensor from the magnetic field of the vessel. It is a passive sensor, emitting no noise, no light, and no magnetic field.</p> <p>A marine magnetometer is used to identify any magnetic anomalies associated with existing pipelines/cables or potential wrecks/debris (including UXO) at the seabed or buried at shallow depth, which would be hazards to installation of infrastructure.</p> <p>The marine magnetometer records the magnetic total field as magnetic induction values in Nano-Tesla (nT) by both channels. High-pass filters are applied to remove the Earth field and long-wavelength anomalies associated with local geology, geomagnetic diurnal variations and vessel heading effects. The residual anomalies have short wavelengths resulting from surface and shallow buried objects.</p> <p>Based on residual anomaly profiles or residual anomaly grid derived from multi-lines, target picking analyses every small area of apparent dipole anomalies and provides the following two pieces of information for each contact: magnetic anomaly size in nT and wavelength of the anomaly field.</p> <p>"Magnetic anomaly" refers to the difference between local total magnetic field strength (magnitude of magnetic induction) and the background values. A magnetised target generates detectable anomalies of different values within a certain area. Usually, the absolute value of the strongest peak/trough within the anomalous area is presented for each target. However, the anomaly size of a target</p>	<p>The magnetometer tow-fish is constructed of stainless steel and is a cylindrical torpedo-like type device, typically ~1.4m long and 7cm in diameter that weighs ~12–18kg in the air (4–12kg in the water) and can be operated by one person.</p> <p>Magnetometers do not emit sound, rather, they operate within the earth's magnetic field, using an atomic resonance of the Cs 133 atom which varies proportional to the ambient magnetic field.</p> <p>A typical type of unit to be used will likely be the Geometrics G-882 marine magnetometer or similar (Photo 2-4).</p> <p>The gradiometer frame enables the caesium vapour magnetometers (with or without altimeters) to be towed with an in-line drag force less than 50Kg.</p>

Purpose/function	Method	Technical specifications
	<p>is not a direct measure to the magnetisation of the target but a non-linear combination of the magnetisation and the distance of detection. These anomalies, or targets, indicate possible objects on the seabed that should be avoided during seabed operations.</p> <p>The magnetometers will be towed in a piggy-back configuration to the SSS system, approximately 10m behind the SSS, as it does not affect data quality of these other sensors. The sensor will be towed as close to the seafloor as possible and sufficiently far away from the vessel to isolate the sensor from the magnetic field of the survey vessel.</p> <p>The gradiometer arrangement can be setup in a Twin (x2) magnetometers (creates a single gradiometer in a rigid frame) or a Quad (x4) magnetometers (creates a wider double gradiometer and has flying height control).</p>	<p>Towing cable lengths are dependent on water depths, vessel speed and equipment weights.</p>
SVP		
<p>Confirms actual speed of sound in water.</p> <p>Since the speed of sound in water can vary (between ~1400 & 1600m/s) dependent on several variables (including salinity, pressure and temperature) it is important to know the actual speed of sound in the water column of interest, so that the signals received from instruments that rely on sound propagation through the water can be accurately</p>	<p>A probe is lowered on a wire down through the water column of interest and data is either recorded on an internal memory card (from which it can be retrieved when the unit is retrieved back to the deployment vessel) or it can be transmitted back to the deployment vessel in real time (if a communications cable is used for deployment).</p>	<p>A typical SVP unit is fitted with 3 sensors: to measure sound velocity, pressure and temperature.</p> <p>The probe consists of a titanium instrument housing and a stainless steel deployment cage.</p> <p>Temperature and pressure are determined using onboard sensors.</p> <p>Sound velocity is determined using a time of flight sound velocity sensor that emits and detects short range sound pulses at between 1 and 8Hz. (Photo 2-5).</p>

Purpose/function	Method	Technical specifications
compensated for this effect.		
PTS		
A specialised technology used to monitor and map the position of pipelines, cables and other subsurface utilities during geophysical surveys.	PTS contains sensors and detectors such as electromagnetic sensors, ground-penetrating radar or magnetometry, which can detect the presence of metallic pipes and cables. High-precision GPS units record the locations of these detected pipelines and cables. The data collected is logged and processed into the PTS, which can be extracted for GIS. PTS is usually mounted on an ROV to complete survey.	PTS is usually mounted onto unstaffed operational systems such as an ROV (Photo 2-6). Sensors typically operate in the range of 50Hz to several kHz, so it can detect soil conditions for up to 30m or more.
Subsea Photogrammetry		
Photogrammetry is used for recording visual inspection of underwater assets/features on the seabed or in the water column. 3D photogrammetry (using multiple cameras) enables accurate 3D modelling and precise measurement of underwater assets/features.	Multiple video/still cameras are deployed subsea to record the data. These cameras may be deployed in a waterproof housing hung on a cable or may be mounted on an ROV. Most cameras include some form of lighting array to illuminate the subject - this is particularly important in spaces where there is poor/no natural light from the sea surface, and in water depths beyond ~50m.	There is an extremely wide range of camera equipment commercially available. Underwater LED arrays typically range in output from 700 lumens to 18,000 lumens, dependent on the specifics of the task involved. (Photo 2-7).

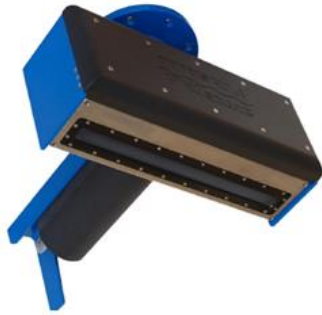


Photo credit: Fugro

Photo 2-1 Typical MBES transducer head

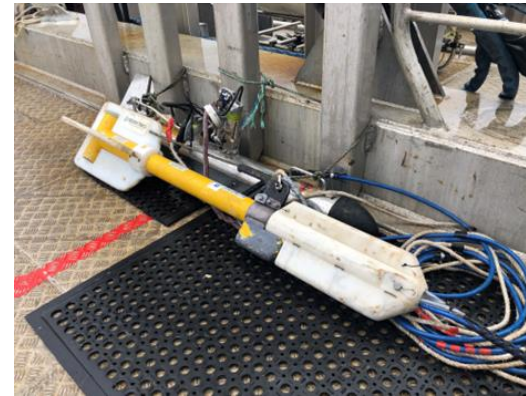


Photo credit: Aventus consulting

Photo 2-2 Typical SSS



Photo credit: Aventus consulting

Photo 2-3 Typical SBP transducer



Photo credit: Fugro

See also magnetometer behind the SSS in Photo 2-2 above

Photo 2-4 Geometrics G-882 magnetometer



Photo 2-5 Valeport - Midas SVP

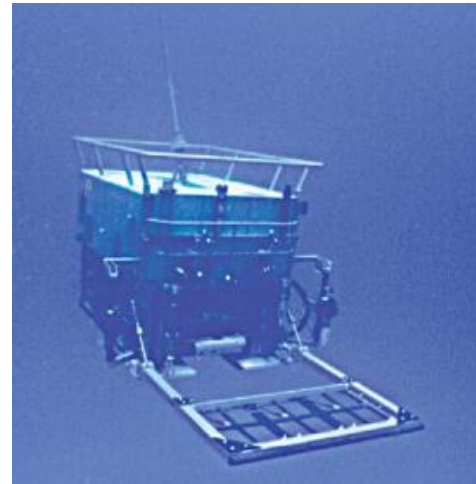


Photo 2-6 Teledyne PTS mounted on an ROV



Photo 2-7 Camera with LED array

2.3.1 Geophysical Equipment Deployment

A survey vessel together with autonomous underwater vehicles (AUV), remotely operated vehicles (ROVs), tow-fish and/or catamaran will be used to deploy geophysical equipment.

Various methods for the deployment of geophysical equipment are considered as SBP, SSS and MBES can be conducted concurrently. Therefore, different proposed deployment methods are summarised in Table 2-3. The selection of equipment will be minimum required to undertake the activity and limit underwater noise to as low as practicable.

Table 2-3 Proposed geophysical equipment deployment method

Geophysical Equipment	Tow-fish	Surface Tow	Deep Tow	Hull Mounted	ROV Mounted	Pole mounted
SBES		✓		✓	✓	✓
MBES		✓		✓	✓	✓
SSS	✓		✓		✓	✓
CHIRP	✓	✓		✓	✓	✓
Pinger	✓				✓	
Boomer		✓	✓			
Sparker		✓				
Magnetometer			✓			

2.4 Geotechnical Investigations

The objective of the geotechnical investigations is to assess and characterise seabed conditions in the nominated locations, specifically:

- to acquire shallow geotechnical samples to support subsea facilities and pipeline design, route selection and seabed stability studies and to calibrate/interpret geophysical records
- to acquire site-specific geotechnical information to be used for jack-up rig (JUR) leg penetration assessment
- to acquire site-specific geotechnical information to support design and installation of development infrastructure, including pipelines, risers, manifolds, Subsea Distribution Units, Umbilical Termination Assemblies, Pipeline/Flowline End Terminations, and mooring anchors
- to acquire geologic cores to aid in understanding the local geology and geo-hazards and help establish ages of key seabed features
- to acquire environmental water and sediment samples.

The geotechnical investigation will involve the following activities:

- borehole drilling at potential drill rig spud can locations
- seabed sampling (including but not limited to grab samples, piston core and vibro core) and CPTu (Piezocone Penetration Test).

All drilling proposed is for geotechnical assessment purposes only – there will be no drilling through petroleum-bearing reservoirs.

A simplified pictorial representation of geotechnical investigation techniques is provided in Figure 2-3.

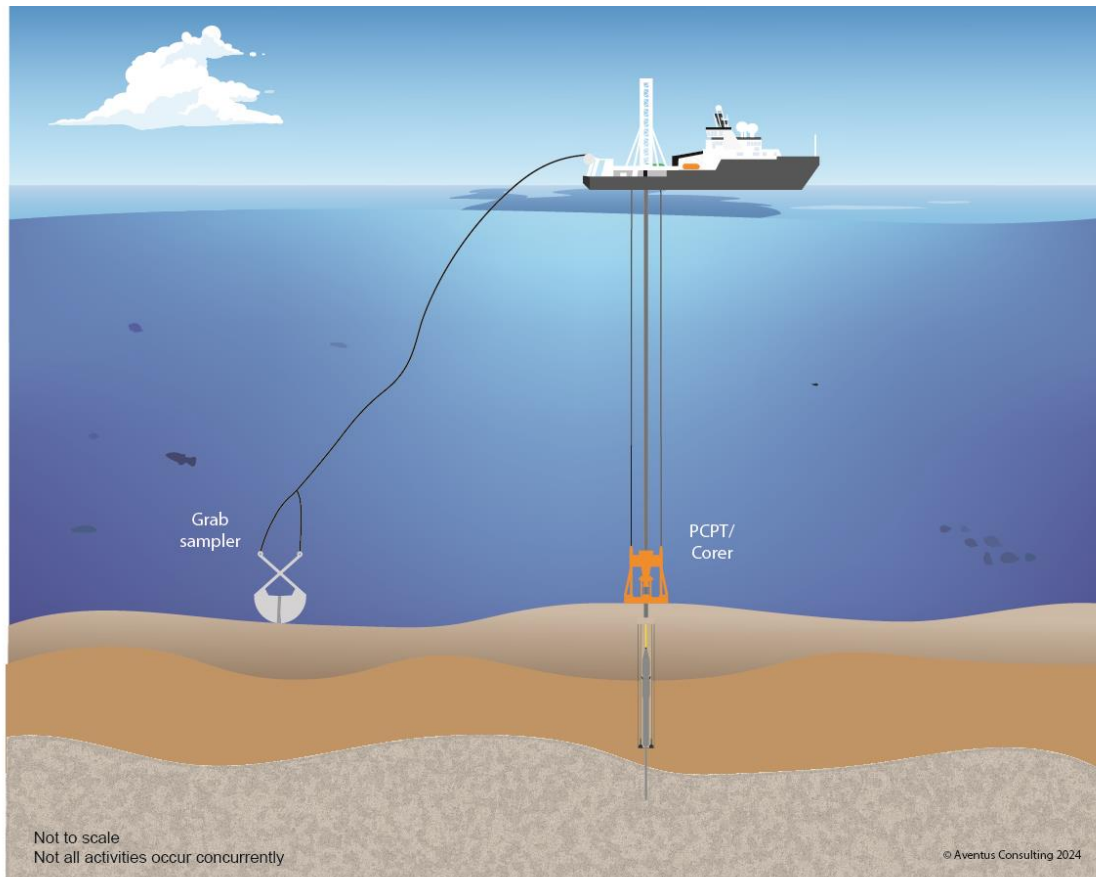


Figure 2-3 Typical geotechnical investigation techniques

For the JUR leg penetration assessment, rotary boreholes will be drilled to coincide with the potential JUR leg locations. The depth of the boreholes will be decided based on requirement of the selected JUR in accordance with the relevant standards. Downhole sampling involves drilling through cemented soils or weak rock using an open-centred drill bit and parallel quick (PQ) coring in rocks using triple tube core barrel.

The CPTu program will involve hydraulically pushing CPT (Cone Penetration Test) rod in the ground.

Geotechnical testing along the pipeline and umbilical routes will involve the collection of a series of Piston Cores (PC)s and Vibrocores (VC) along the proposed alignment at predetermined intervals.

The maximum spacing between tests will be 500m, with additional tests where there is an observed change in soil characteristics. Target depth for the cores is 3m. CPTu testing will be undertaken on all cores collected.

Table 2-4 Description of geotechnical investigation techniques

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
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 2cm 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, depending on water depth.</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>Several variations of CPT will be used, these being:</p> <ul style="list-style-type: none"> • Shallow seabed CPT • Deep seabed CPT • Downhole CPT • Thermal CPT 	<p>The CPT unit consists of a rod up to 60m long (or discrete rod sections to make up a total of 60m) that has a small cone at its base (with typical cone tips having a cross-sectional area of 2, 5, 10 or 15cm²).</p> <p>A CPT unit typically has a cone tip area of 2-15cm² and penetration of 10m.</p>	<p>CPT to be taken at the same time as borehole sampling, therefore approximately 30 samples per campaign will include shallow seabed CPT, deep seabed CPT, downhole CPT.</p> <p>Approximately 30 CPTu taken per campaign.</p>

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	<ul style="list-style-type: none"> CPTu <ul style="list-style-type: none"> CPTu program will involve hydraulically pushing CPT (Cone Penetration Test) rod in the ground. <p>Shallow seabed CPT, deep seabed CPT and downhole CPT will alternate with composite borehole samples and reach a maximum of 60m deep.</p>		
Coring			
Typically, one sample is collected from the centre of the nominated WTG or substation installation site, which is used to ground-truth the geophysical data.	<p>Various types of coring (vibro, box and piston) can be undertaken to gather samples for undertaking geological analysis of formations below the seabed. The aim is to gather intact cores for laboratory testing. One or more of these types of coring may be employed for this activity, so each is described here.</p> <p>Vibrocoring is a technique for collecting core samples in unconsolidated sediments by using a vibrating device (generally referred to as 'vibrohead') to drive a coring tube into the seabed. Typically, two large electrical motors power concentric weights, which produce the necessary vibration. The motors are adjustable and can run at various frequencies (generally 50Hz). Once the unit is on the sea floor, the high-power vibrator motors are engaged and drive the core barrel with PVC liner into the seabed.</p> <p>The vibrocoring unit has been designed for easy vertical recovery on to the vessel and then easy recovery of the core barrel to the deck.</p> <p>The corers are lowered by winching a cable wire from the vessel at approximately 1-2m/s, so the duration of</p>	<p>Vibrocorers typically core to a depth of up to 6m (using 3m segments). Corer barrels can be up to 112mm in diameter, with cores up to 96mm in diameter.</p> <p>The width of the winch tower required to lower and operate the corer is typically up to 1.2m, the dimensions of the base supports is up to 5 x 5m (25m²), and the weight of the equipment varies from 1,450kg (3m segment) up to 4,000kg (for a 12m segment) depending</p>	Approximately 60 vibro cores, 60 piston cores and 60 box cores will be taken per campaign.

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	lowering and recovery operations in the activity area will be short (15-30 seconds at each site). Sampling itself is of a very short duration at each location (typically 5 to 10 minutes).	on whether the unit uses standard or high power. Vibration force can vary between 44kN (standard power) and 89kN (high power).	
	A piston corer (Photo-28) is normally used on soft, unconsolidated sediments. The coring unit is deployed from the side of the vessel using a dedicated coring deployment system comprising a winch, overhead coring boom and core handling system. The coring unit consists of the head weight, coring tube, removable inner core liner and core catcher. A piston corer is lowered by wire rope to the seabed. It has a trigger device that hits the seabed before the core barrel and releases the corer allowing it to freefall. As the barrel enters the sediment, a special internal piston creates a vacuum and helps to draw the core into the barrel. Core catchers prevent the sediment from coming out of the coring tube. This suction reduces compaction of the sample in the inner sleeve. The coring system can be assembled with different length cores ranging from 3m to 24m (typically no greater than 6m).	Piston corers typically core to a depth of up to 6m (using 3m segments). Core barrels generally contain an inner PVC liner with a diameter of 0-90mm that retains the sample. Piston corers with a 6m length and diameter of 8cm, for a volume of approximately 0.03m ³ .	
	Box corers (Photo-29) are designed to take 'undisturbed' samples from the top of the seabed and are suitable for almost every type of sediment. The box core relies on its own weight for penetration of the seafloor and has a single swing arm that closes after	Typical dimension of a box corer is 0.5m x 0.5m x 0.5m (L x B x H).	

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	<p>being triggered to retain the sample on retrieval. Operation is simple and straightforward; when the frame touches the seafloor, a gimbal suspension combined with the weight of the core box ensures the box is always in the vertical position. When the weight is taken off the hoist cable, the trigger mechanism releases the cylinder-shaped core box. This can penetrate the seabed to depths ranging between 5cm and 1m using the weight of the box corer to push it into the sediment.</p> <p>The driving force can be adjusted by adding or removing lead weights. Both the top and bottom of the core box are now automatically closed, and the seabed sample is collected. The box is then removed from the corer enabling unrestricted access to the sample surface and sides. Sampling itself is of a very short duration.</p>		
	<p>A gravity corer is designed for recovery of seabed soil samples in areas of soft, unconsolidated sediment.</p> <p>A GC is a general purpose tool that relies on its self-weight for penetration into the seafloor. A typical GC consists of a weight atop a core barrel which houses an internal core sleeve. The unit is lowered from a deployment vessel to a predetermined height above the seafloor using a wire rope before being allowed to freefall. The resulting soil core enters the internal sleeve and is held in place by a core catcher. The wire rope is then reeled in, and the inner sleeve is removed from the core barrel and the core is processed.</p> <p>A small hole will remain in the seabed, which will eventually collapse and infill with the movement of seabed sediments.</p>	<p>There are a variety of these available in the marketplace.</p> <p>A typical GC consists of a one tonne weight atop a steel core barrel with an internal PVC core sleeve.</p> <p>Gravity cores typically recover soils down to 5-15m below the seabed, depending on the soil conditions and the information required. (Photo 2-12).</p>	

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
Borehole sampling/coring			
Borehole sampling gathers geotechnical soil data.	<p>Borehole sampling involves drilling through cemented soils or weak rock using an open-centered drill bit and PQ coring in rocks using triple tube core barrel. 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.</p> <p>Borehole drilling also requires the use of a surface mud system that delivers drilling fluid downhole and is then recirculated until the target depth is achieved.</p> <p>For borehole coring, wireline-deployed hydraulically operated push or piston samplers will be used to recover high quality samples.</p> <p>Coring will require positioning of a frame on the seabed and boreholes will be drilled with a 100mm drill pipe. Drilling fluids are required to lubricate the drill bit, transport cuttings out of the borehole and keep the borehole clean. The drill fluid comprises primarily seawater with inert additives to form a water-based mud (WBM) that is non-toxic and biodegradable. Drill fluids are described in Section 2.4.2.</p>	<p>The seabed frame used to support the corer typically has dimensions of 2.5 x 2.5m.</p> <p>The type of sample tube used will depend on the soil type expected and for piston/push would typically be 76mm (outside diameter), 72mm (internal diameter), and nominal 1m length, for a footprint of 10-12m².</p>	Approximately 30 boreholes taken concurrently with CPT per campaign.

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	<p>Several variations of borehole sampling may be undertaken:</p> <ul style="list-style-type: none"> Rotary coring (to 6m deep) – in case of rock that needs to be cored. Composite boreholes (to 60m deep) – involves borehole sampling and alternating with CPT (described earlier) at 3m intervals (i.e. 3m push CPT in hole, drill out sample and push down to obtain 3m borehole sample, continuing this pattern to the penetration depth of interest). Continuous sampling (to 61m deep) – per generic description. <p>Based on a seabed frame footprint of 6.25m² and up to 30 borehole sampling locations, the area of temporary disturbance for this sampling technique is approximately 187.5m².</p>		
Seabed grab sampling			
Seabed grab sampling provides samples for undertaking analysis of unconsolidated seabed sediments (i.e. sands, silts, and clays).	<p>Grab sampling is a process of collecting small samples of surface sediments from the seafloor. Only surface sediments are collected, and the sampler has no ability to penetrate to depth.</p> <p>Grab samples typically use a Van Veen grab sampler, which is a light-weight sampler designed to take large samples in soft seabed sediments. It has long lever arms and sharp cutting edges on the bottom of the scoops, much like a set of jaws, which enable it to cut into the seabed. The</p>	<p>Van Veen grab samplers are generally constructed of stainless steel with lead blocks. Depending on the model used, they can weigh 2.4–30kg in air and generally obtain less than 3 litres of sediment.</p> <p>The grab sample skims the seabed surface, and each</p>	Approximately 30 samples will be taken per campaign.

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	<p>weighted jaws, chain suspension, and doors and screens allow flow-through during lowering to the seabed (using a winch) and assure vertical descent where strong underwater currents exist.</p> <p>When the lowering cable is taut the grabs 'arms' are locked open. Then, when the grab touches the seabed, the cable becomes slack, which releases catches and, on recovery, the cables attached at the top of the arms exert tension on the arms extending from the jaws, causing them to lift, and cause the jaws to dip deeper into the sediment, and trap material as they tightly close. Also, when the grab settles on the seabed, the flaps fall back and cover the screens completely, helping to prevent any loss of sediment during retrieval.</p>	sample volume is generally less than 0.5m ³ (Photo 2-11).	
In situ thermal conductivity tests			
These tests accurately estimate the specific thermal capacity of the soil.	Thermal conductivity testing involves measuring the temperature response to heat injection in a borehole. A thermal probe will be lowered into boreholes (as described above), with a thermal conductivity test performed every 1m below the seabed to a total depth of 6m.		Approximately 30 samples of thermal conductivity tests and 30 samples of TBP.
T-Bar Penetrometer (TBP)	<p>TBP determines soil strength and helps to delineate soil stratigraphy. This method is best suited to soft soils where the accuracy of CPT data may be affected, especially in deeper water depths.</p> <p>This data ground-truths the geophysical data and provides soil strength data that can be used for geotechnical analysis.</p>	The TBP is typically a steel rod 40mm in diameter and 250mm in length. (Photo 2-13).	

Purpose/function	Method	Technical specifications	Indicative maximum number of samples per campaign
	<p>The TBP involves in-situ measurement of the resistance of the seabed soil layers to continuous penetration and extraction (at a steady rate) of a cylindrical rod (T-bar penetrometer) positioned perpendicular to the lower end of a push rod.</p> <p>These measurements allow high quality interpretation of soft soil ground conditions and pore pressure dissipation.</p> <p>A T-Bar is pushed in to a soil sample recovered from the seabed by a Box-Corer to obtain geotechnical data.</p>		
Rock Coring			
<p>A Rock Coring (RX) unit is designed to recover soil samples from hard/rocky seabeds. The recovered core samples ground-truth the geophysical data and provide soil strength data that can be used for geotechnical analysis.</p>	<p>Rock coring units can be either ship-based or seafloor based. Ship-based units require a dedicated, purpose-built vessel. Seafloor-based units can typically be deployed from a suitable vessel of opportunity and consist of a stand-alone robotic system (such as the Benthic PROD system). Such systems typically use rotary drilling equipment with core bits.</p>	<p>The technical specifications of RX units vary widely and are dependent on the characteristics of the system selected for deployment.</p>	<p>Rock coring samples are included with rotary coring (borehole coring).</p>



Photo 2-8 Piston corer



Photo 2-9 Box corer deployment



Photo credit: Fugro

Photo 2-10 High-performance corer

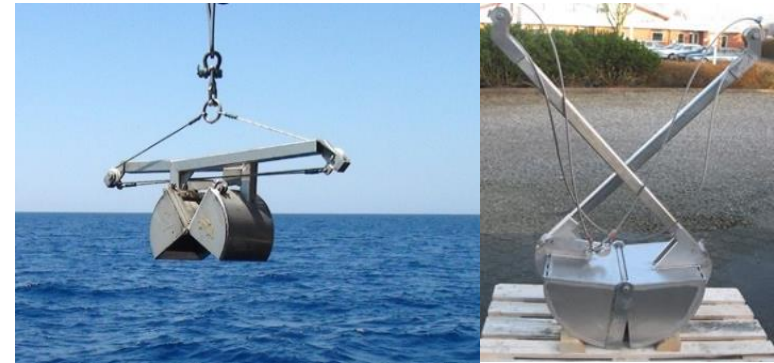


Photo credit: Fugro

Photo 2-11 Van Veen grab sampler



Photo 2-12 Typical gravity corer



Photo 2-13 T-bar penetrometer

2.4.1 Drill Cuttings

The coring process will generate drill cuttings, which are inert pieces of rock, gravel and sand removed from the subsurface borehole during the rotary drilling process. They are comprised of calcarenite, shale and sandstone. Cuttings are likely to range in size from very fine to very coarse particles, with a mean size 10mm in diameter.

The coring process generates minimal cuttings in the form of benign calcareous sediment which are removed from the borehole by drilling fluid and discharged at the seafloor. The borehole diameter will be 100mm or less. Boreholes drilled will generate a very small volume of cuttings.

2.4.2 Drilling Fluids

Drilling fluid is required to lubricate the face of the drill bit, keep the boreholes clean, (free from cuttings) and prevent the borehole from collapsing during the coring process. Seawater is the primary constituent of geotechnical drilling fluids. One or more chemically inert water-based muds (WBM) may be added to seawater to increase the specific gravity of the mud. Common WBM that may be used during the survey program are outlined in Table 2-5. The geotechnical drilling fluids that will be used will only be known after a specific contract is awarded.

Table 2-5 Common drilling fluid additives for geotechnical seabed coring

Fluid	Function	Offshore Chemical Notification Scheme (OCNS) Rating
Guar gum	Viscosifier	OCNS Group E
Bentonite	Viscosifier	OCNS Group E
Barite	Lost circulation material	OCNS Group E

2.4.3 Fluid Assessment Process

Esso will review the geotechnical drilling fluids for environmental acceptability as part of the chemical approval process (See 8.9.1.1). This staged process involves a review of all chemicals against international standards, for example the Chemical Hazard Assessment and Risk Management (CHARM) or Offshore Chemical Notification Scheme (OCNS), OSPAR as used in the North Sea.

If the chemical has not been assessed internationally, environmental testing information (e.g. aquatic toxicity, biodegradation or bioaccumulation results) is used for the assessment. Chemicals that do not pass one of these two acceptance tests are not considered 'low impact' or suitable for overboard discharge and will not be discharged to the marine environment. Not all water-soluble chemicals are required to be subject to the Chemical Approval process, as a minimum, only water-soluble chemicals intended for discharge.

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 7 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 Minamata Convention applies to trace volumes of mercury that may be contained with circulation fluids and water-based muds (particularly barite).

The chemical discharge assessment procedure takes this into consideration and assess the concentration levels of any planned discharge that may contain mercury.

2.5 Proposed survey vessels

Two different types of vessel are likely to be contracted to complete the activity, as follows:

- Geophysical investigations – a small, regionally-based vessel capable of towing light-weight equipment
- Geotechnical investigations – a larger specialised vessel with a large deck area and drilling derrick will be necessary. This may be mobilised from the existing Esso fleet or elsewhere in Australia or internationally.

Table 2-6 presents the ranges of key vessel dimensions and tank capacities for vessels that have undertaken geotechnical investigations (as the largest type of vessel required) elsewhere in Australia (including Gippsland). This provides an indication of the likely size of the geotechnical vessel required, noting that geophysical vessels will typically be smaller than geotechnical vessels. Figure 2-4 – Figure 2-6 show typical geotechnical vessels.

Note: There will only ever be one campaign vessel operating at a time.

Table 2-6 Typical geotechnical vessel specifications

Parameter	Specification range
Vessel type	Multi-purpose supply, platform supply
Crew accommodation	42 – 84 people
Tonnage (gross)	1,450 – 6,543t
Dimensions	
Length	67 – 104m
Breadth	16 – 20m
Draught	5.5 – 8m
Deck area	420 – 1,020m ²
Tank capacities	
Potable water	240 – 1,021m ³
Mud (liquid)	90 – 880m ³
Brine	400 – 1,150m ³
Fuel oil	800 – 1,357m ³

Based on the Fugro Voyager, Go Capella, and Fugro Synergy.



Figure 2-4 *Go Capella*



Figure 2-5 *Fugro Voyager*



Figure 2-6 *Fugro Synergy*

2.5.1 *Survey Vessel Positioning*

This section describes the two positioning methods that the vessels will utilise.

2.5.1.1 *Ultra-short Base Line*

Ultra-short Base Line (USBL) acoustic positioning system is likely to be utilised on board the survey vessels. This tool is used to locate the position of equipment lowered to the seabed. The USBL system uses a vessel-mounted transceiver to detect the range and bearing to a target using acoustic signals. This range and bearing technique is based on two principles:

- an accurate range can be determined by knowing precisely the time taken for an acoustic signal to travel between the target and the transceiver and the speed at which the signal travelled (sound speed)
- the bearing can be determined by knowing the discrete difference in phase between the reception of the signal at the multiple transducers present in the transceiver. This allows the USBL system to determine a time-phase difference for each transducer and therefore calculate the angle of the arriving signal.

An acoustic pulse is transmitted by the transceiver and detected by the subsea transponder, which replies with its own acoustic pulse. This return pulse is detected by the shipboard transceiver. The time from the transmission of the initial acoustic pulse until the reply is detected is measured by the USBL system and is converted into a range. To calculate a subsea position, the USBL calculates both a range and an angle from the transceiver to the subsea beacon. Angles are measured by the transceiver, which contains an array of transducers. The transceiver head normally contains three or more transducers separated by a baseline of 10 cm or less. A method called phase-differencing within this transducer array is used to calculate the angle to the subsea transponder. The transducer will then send sound signals, to a USBL transponder mounted on the object (such as a seabed frame or coring device), whose position is being determined. The USBLs typically operate in a frequency range between 7 and 70kHz, with source levels in the range of 180–206dB re 1µPa @ 1m (Kent, et al., 2016).

2.5.1.2 *Dynamic Positioning*

Dynamic positioning (DP) is used to keep a vessel at a fixed position and heading (direction) without the use of anchors. A DP system is able to control the position and direction of a vessel by using thrusters that are constantly active and automatically balance the environmental forces (such as wind, waves and currents). Environmental forces tend to move the vessel off the desired position while the automatically controlled thrust balances those forces and keeps the vessel in position. Frequency generated by DP can reach up to 64kHz (continuous sound) or 126.5dB re 1µPa ² SEL (Martin, Morris, Bröker, & O'Neill, 2019).

2.5.2 *Survey Vessel Refuelling and Support Vessel*

Vessels may either refuel at sea or return to port for refuelling depending on the type and length of the campaign. Similarly, equipment transfers, and reprovisioning are rarely required, however, depending on the location and scale of the campaign, a material or equipment transfer may be needed and in these instances will be provided by a support vessel.

2.5.3 *Helicopter operations*

Crew changes may be undertaken via helicopter and undertaken in accordance with the Bass Strait EP (AUGO-EV-EMM-002). Helicopter crew changes are likely to be minimal and not required every campaign. The helicopter operations will be undertaken via the use of the existing Esso fleet and would be considered as an extra stop in the normal routine operations flights if required.

3 Description of the environment

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

- Activity Area – the area encompassing Esso’s licences within the Gippsland Basin where G&G investigations are proposed. The activity area is shown in Figure 3-1 and described in Section 3.2.
- Operational Area (OA) – The 500m radius around each vessel where the individual activity will take place (at any location within the activity area).
- Environment That May Be Affected (EMBA) – Determined by spill modelling for marine diesel oil (MDO), which is the total area in which there could be exposure to hydrocarbons, including trace concentrations in the water column, as a result of an MDO spill from this activity (Figure 3-1). The description of the EMBA is provided in [Appendix A](#).

3.1 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. The modelling commissioned for this EP is based on a result of five MDO spill scenarios associated with support vessel activities in the Gippsland Basin. 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, 2019), 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 100 individual spill simulations from a MDO spill due to a vessel collision at Perch Platform, West Kingfish Platform, Kipper Facility, Barracouta Platform and Halibut A Platform. The Perch, West Kingfish, Kipper, and Barracouta spills simulate the surface release of 280m^3 of MDO over 6hrs (tracked for 30 days) and the Halibut spill simulates the surface release of 220m^3 of MDO over 6hrs (tracked for 20 days) using annualised metocean conditions.

The RPS (2019) report uses oil spill thresholds that align with what is currently accepted (i.e. (NOPSEMA, 2019), as listed in Table) and represents a spill volume that remains realistic (if not conservative) for this activity. The spill locations used in (RPS, 2019) are within the activity area and therefore, are relevant to this activity.

The EMBA is shown in Figure 3-1 and described in [Appendix A](#). 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	1g/m^2	Approximates range of socioeconomic effects and establishes planning area for scientific monitoring.
Shoreline – low exposure	10g/m^2	Predicts potential for some socioeconomic impact.
In-water (dissolved) – low exposure	10ppb (instantaneous)	Establishes planning area which may be considered for scientific monitoring based on potential for exceedance of water quality triggers.

Exposure level	Threshold	Description
In-water (entrained) – low exposure	10ppb (instantaneous)	Establishes planning area which may be considered for scientific monitoring based on potential for exceedance of water quality triggers.

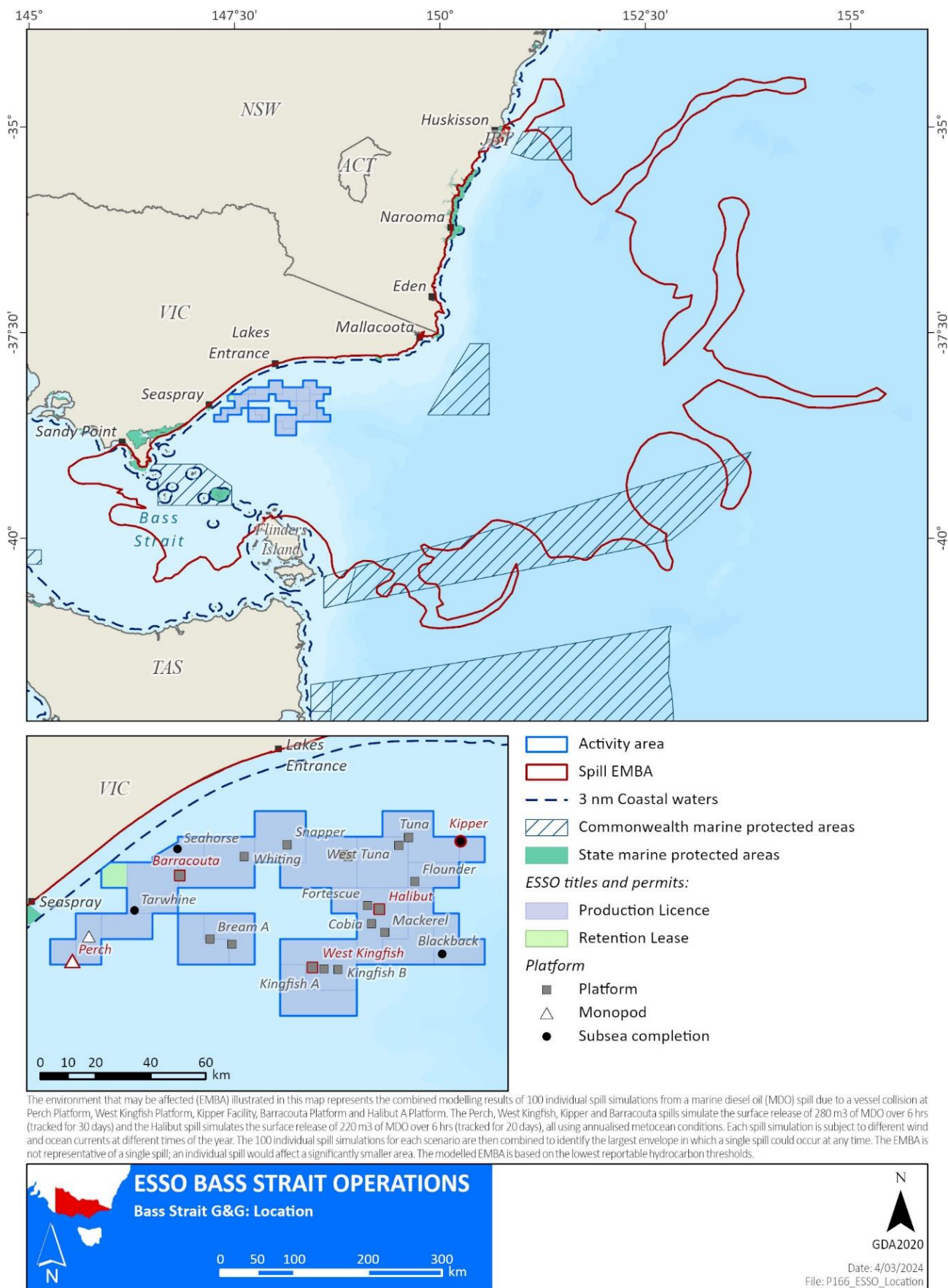


Figure 3-1 G&G activity area and EMBA

3.2 Values and sensitivities

The values, sensitivities and receptors found within the activity area 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 activity area and EMBA are provided in [Appendix B](#). EPBC Act Protected Matters Search Tool Reports for the activity area and EMBA are presented in [Appendix C](#) and [Appendix D](#) respectively.

Table 3-2 Values and sensitivities within the activity area

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 activity area. The closest World Heritage Property is the Royal Exhibition Building and Carlton Gardens (onshore), which is located 213km northwest of the activity area. 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 activity area. The closest National Heritage Place is the Australian Alps National Parks and Reserves (onshore), which is located 60km north the activity area. 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 activity area. The closest Ramsar wetland is the 'Gippsland Lakes', which is located 9km north of the activity area. 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>

Value/sensitivity	Receptor	Description
		There are no NIWs within or adjacent to the activity area. The closest NIW is the Lake King wetlands, which is located 21km north of the activity area. NIWs intersected by the EMBA are described in Section 1.1.5 of Appendix A .
Listed Threatened Species and Listed Migratory Species (listed in Appendix B , described in Appendix A)	Fauna	Threatened species (Appendix B)
		Total Threatened Species 45
		Critically Endangered 2
		Endangered 10
		Vulnerable 26
		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) 11
		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 activity area. The BIAs within the EMBA are outlined in Appendix A .

Value/sensitivity	Receptor	Description	
		Species	BIA type
		Birds (Appendix B Table B-3)	
		Antipodean albatross (Figure 3-2)	Foraging
		Black-browed albatross (Figure 3-2)	Foraging
		Buller's albatross (Figure 3-2)	Foraging
		Campbell albatross (Figure 3-2)	Foraging
		Common diving-petrel (Figure 3-4)	Foraging
		Indian yellow-nosed albatross (Figure 3-3)	Foraging
		Short-tailed shearwater (Figure 3-4)	Foraging
		Shy albatross (Figure 3-3)	Foraging
		Wandering albatross (Figure 3-3)	Foraging
		White-faced storm-petrel (Figure 3-4)	Foraging
		Whales (Appendix B Table B-4)	
		Pygmy blue whale (PBW) (Figure 3-5)	Foraging
		Southern right whale (SRW) (Figure 3-6)	Migration

Value/sensitivity	Receptor	Description
		Sharks (Appendix B Table B-2)
		White shark (Figure 3-8) Breeding
Listed Threatened Ecological Communities (TECs)	-	<p>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).</p> <p>There are no TECs within or adjacent to the activity area. The closest TEC is the 'Subtropical and Temperate Coastal Saltmarsh', which has a patchy distribution along the coastline adjacent to the activity area. TECs intersected by the EMBA are described in Section 1.1.6 of Appendix A.</p>
Australian Marine Parks (AMPs)	-	<p>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).</p> <p>There are no AMPs within or adjacent to the activity area. The closest AMP is Beagle AMP which is located 58km southwest of the activity area. AMPs intersected by the EMBA are described in Section 1.1.7 of Appendix A.</p>
Key Ecological Features (KEFs)	Upwelling East of Eden (Figure 3-9)	<p>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).</p> <p>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).</p> <p>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,</p>

Value/sensitivity	Receptor	Description
		other cetaceans, sharks, and seabirds (Commonwealth of Australia, 2015). KEFs intersected by the EMBA are described in Section 1.1.8 Appendix A .
Other protected areas		
Social/cultural/conservation	National parks and reserves	There are no national parks or reserves within the activity area. The closest protected area is the Ninety Mile Beach Marine National Park which is located 9.5km west of the activity area. National parks and reserves intersected by the EMBA are listed in Section 1.1.9 of Appendix A .
Commonwealth Heritage Listed places	-	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). There is no Commonwealth Heritage Listed places within the activity area. Commonwealth Heritage Listed places intersected by the EMBA are described in Section 1.1.3 of Appendix A .
Historic maritime	Historic shipwrecks (Figure 3-10)	Historic shipwrecks are located all along the Australian coastline, numerous are located within the Gippsland region. The following shipwrecks are within the activity area: <ul style="list-style-type: none"> • Colleen Bawn (1913) • Struan (1856) • Rembrandt (1861) • Aho 6528 (unknown) • Talak (n.d) • Levenlass (1854) • Favourite (1852)

Value/sensitivity	Receptor	Description
		No shipwreck protection zones are within the activity area. The closest protection zone is the SS Glenelg, which is 3.5km west of the activity area.
Environmental values – Other		
Physical environment	Climate and meteorology	<p>Climate statistics from 1991-2020 at east Sale (Victoria) (the closest weather station to the activity area) 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 33.4mm in May (lowest) to 62.2mm in November (highest) (BOM, 2023).</p> <p>Wind speeds for east Sale between 1991-2017 range from 11.1 to 16.3km/hour in the morning and 17.1 to 24.2km/hour in the afternoon, with maximum gusts reaching 152km/hour.</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> <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>

Value/sensitivity	Receptor	Description
	Bathymetry (Figure 3-11)	The activity area is located in water depths ranging from 10 to 300m in most license areas and up to 1500m in VIC/L20 in the Gippsland Basin. The bathymetry contours generally run parallel to the coast, though this pattern is less pronounced in waters deeper than 50m.
	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>There are no known sensitive seabed features (e.g. islands, emergent reef systems, canyons, shipwrecks) or sensitive benthic primary producer habitats (e.g. areas of hard corals, seagrass, macroalgae or mangroves) mapped in the activity area (Butler, Althaus, Furlani, & Ridgway, 2002). Benthic fauna present on the soft sediment can be broadly divided into two groupings (Parry, Campbell, & Hobday, 1990):</p> <ul style="list-style-type: none"> • Epibenthos which includes sessile species such as sponges and bryozoans, hydroids, ascidians, poriferans and mobile fauna including hermit crabs, sea stars and octopus. • Infauna which includes a diverse range of species such as amphipods, shrimps, bivalves, tubeworms, small crustaceans, nematodes, nemerteans, seapens, polychaetes and molluscs.
Economic environment	Commercial fishing (See Appendix A Section 1.6 for description of fisheries)	<p>Commonwealth fisheries overlapped by the activity area:</p> <ul style="list-style-type: none"> • Bass Strait Central Scallop Zone Fishery- 1.9% overlap with the activity area (see Figure 3-12) • Eastern Tuna and Billfish Fishery – 0.13% overlap with the activity area (see Figure 3-13) • Small Pelagic Fishery – 0.15% overlap with the activity area (see Figure 3-14) • Southern and Eastern Scalefish and Shark Fishery (SESSF) zones (see Figure 3-15) • SESSF – CTS – Danish seine sector – 0.39% overlap (Figure 3-16) • SESSF – CTS – otter board sector – 0.39% overlap (Figure 3-17) • SESSF – shark hook sector – 0.33% overlap with the activity area (Figure 3-18) • SESSF – shark gillnet sector – 0.33% overlap with the activity area (Figure 3-19) • SESSF – scalefish hook sector – 0.19% overlap with the activity area (Figure 3-20) • Southern Bluefin Tuna Fishery – 0.06% overlap with the activity area (see Figure 3-21) • Southern Squid Jig Fishery - 0.18% overlap with the activity area (see Figure 3-22)

Value/sensitivity	Receptor	Description
		<p>State Fisheries – Victoria overlapped by the activity area:</p> <ul style="list-style-type: none"> • Abalone Fishery – 4.32% overlap with the activity area (see Figure 3-23) • Eel Fishery – data unavailable for this fishery • Giant Crab Fishery – 4.29% overlap with the activity area (see Figure 3-24) • Rock Lobster Fishery – 4.29% overlap with the activity area (see Figure 3-24) • Pipi Fishery – 5.6% overlap with the activity area (see Figure 3-25) • Wrasse Fishery – 4.03% overlap with the activity area (see Figure 3-26) • Sea Urchin Fishery – 5.17% overlap with the activity area (see Figure 3-27) • Scallop Fishery – 4.03% overlap with the activity area (see Figure 3-28) • Octopus Fishery – 4.32% overlap with the activity area (see Figure 3-29)
	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).
	Renewable Energy	<p>The activity area overlaps Australia's first offshore area declared available for renewable energy projects (OEI-01-2022 Part 1) See Figure 3-30. The activity area also overlaps the following newly released Offshore wind feasibility licences holders:</p> <ul style="list-style-type: none"> • Blue Mackerel North Pty Ltd - FL-001 • Iberdrola Australia OW 2 Pty Limited - FL-012 • Navigator North Project Pty Ltd - FL-011 • Gippsland Dawn OWP Project Pty Ltd - FL-007.

Value/sensitivity	Receptor	Description
	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 3-31).
	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 activity area.
	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.
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). 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 activity area. 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>

Value/sensitivity	Receptor	Description
		<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 activity area 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 commitment to the Sea Country IPA Program. The program seeks to increase the area of sea in IPAs to 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, GLaWAC signed an agreement with the Federal Government to start the process of establishing a Sea Country IPA from Nanjit, 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 activity area).</p>
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 20km north of the activity area and nearshore coastal waters. The Gippsland Lakes Fishing Club is a well known active recreational fishing club within the region.

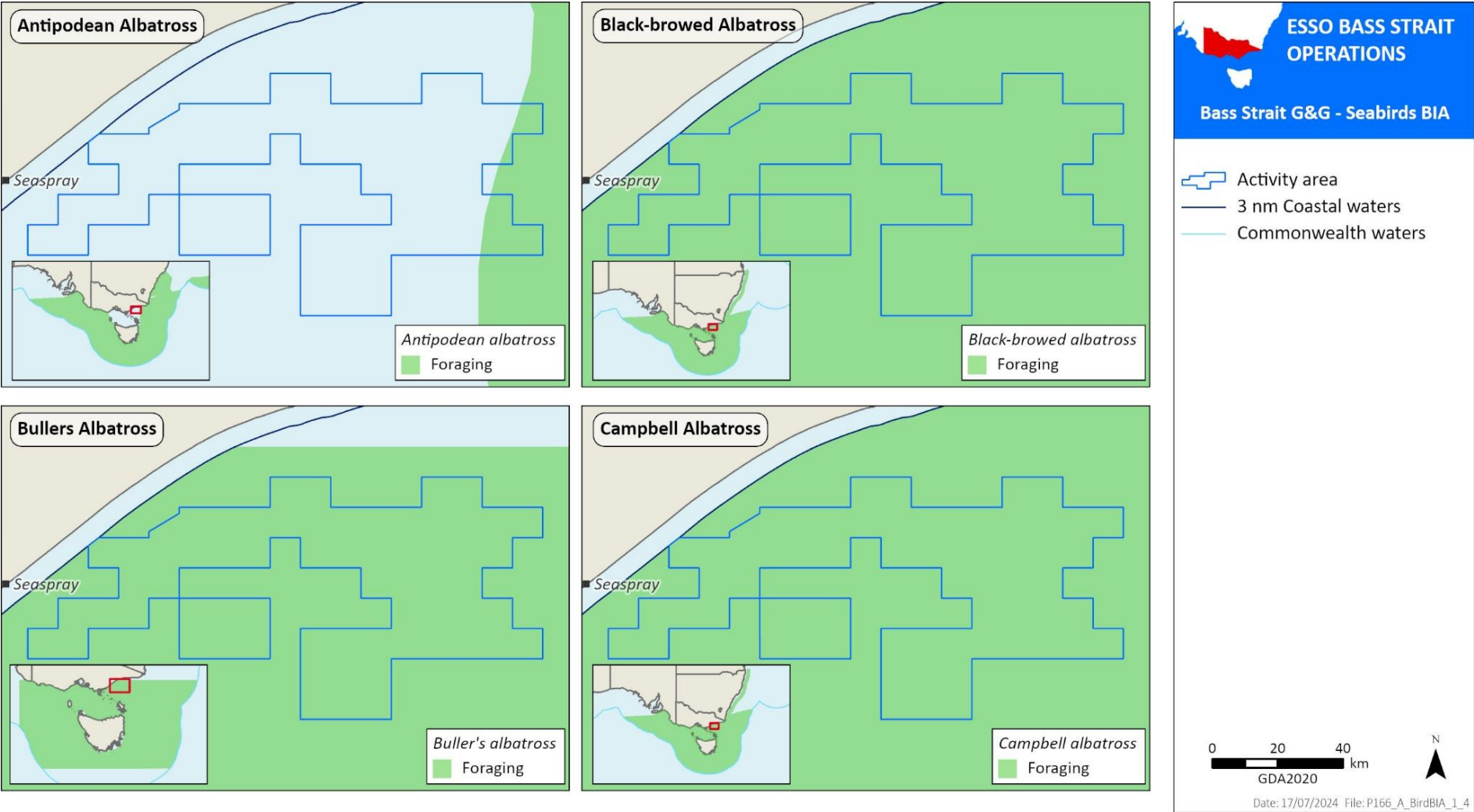


Figure 3-2 BIAs for the Antipodean, black-browed albatross, Buller’s albatross, and Campbell albatross overlapped with the activity area

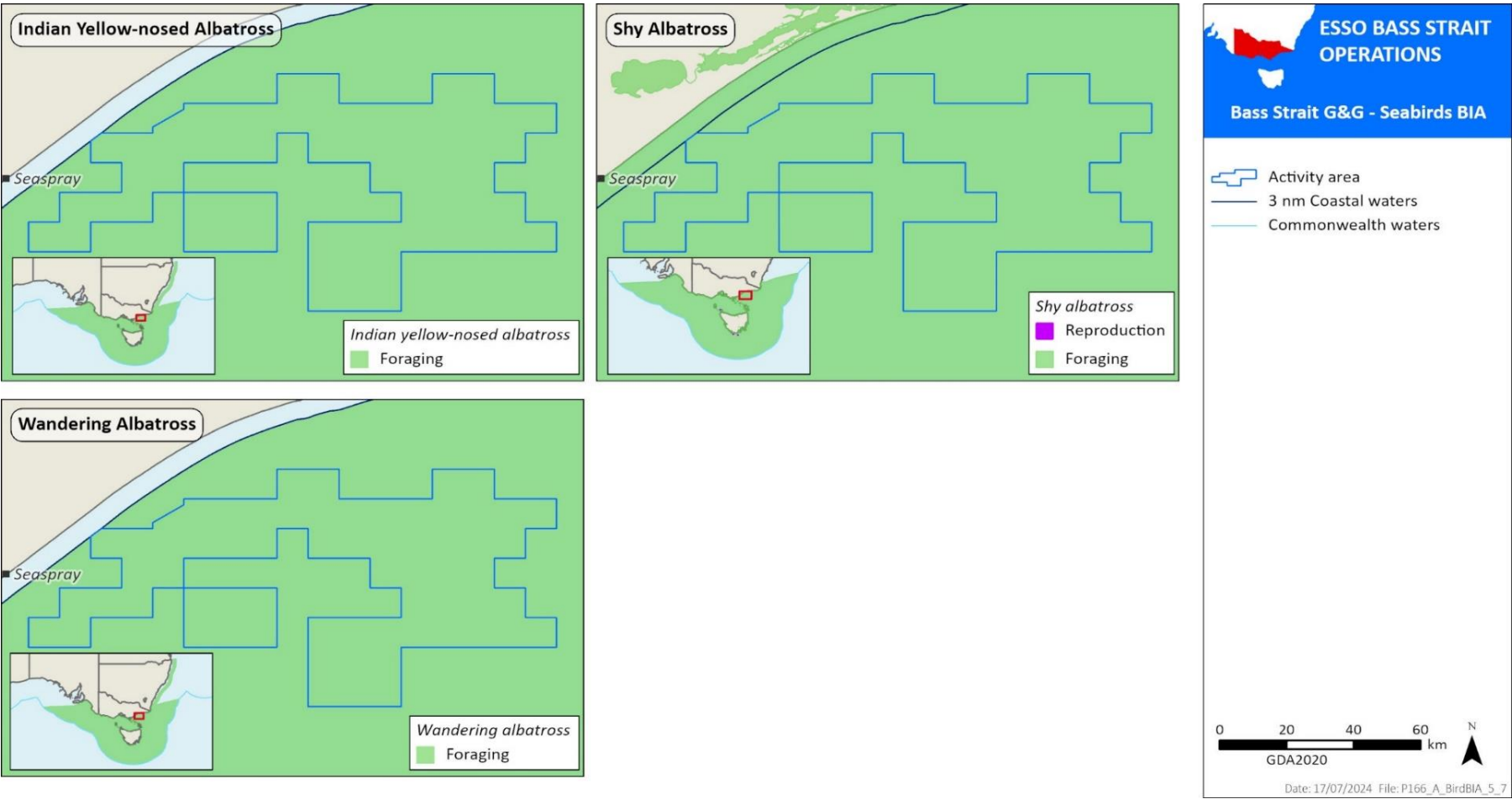


Figure 3-3 Foraging BIAs for the Indian yellow-nosed albatross, shy albatross and wandering albatross overlapped with the activity area



Figure 3-4 Foraging BIAs for the short-tailed shearwater, white-faced storm petrel and the common diving petrel overlapped with the activity area

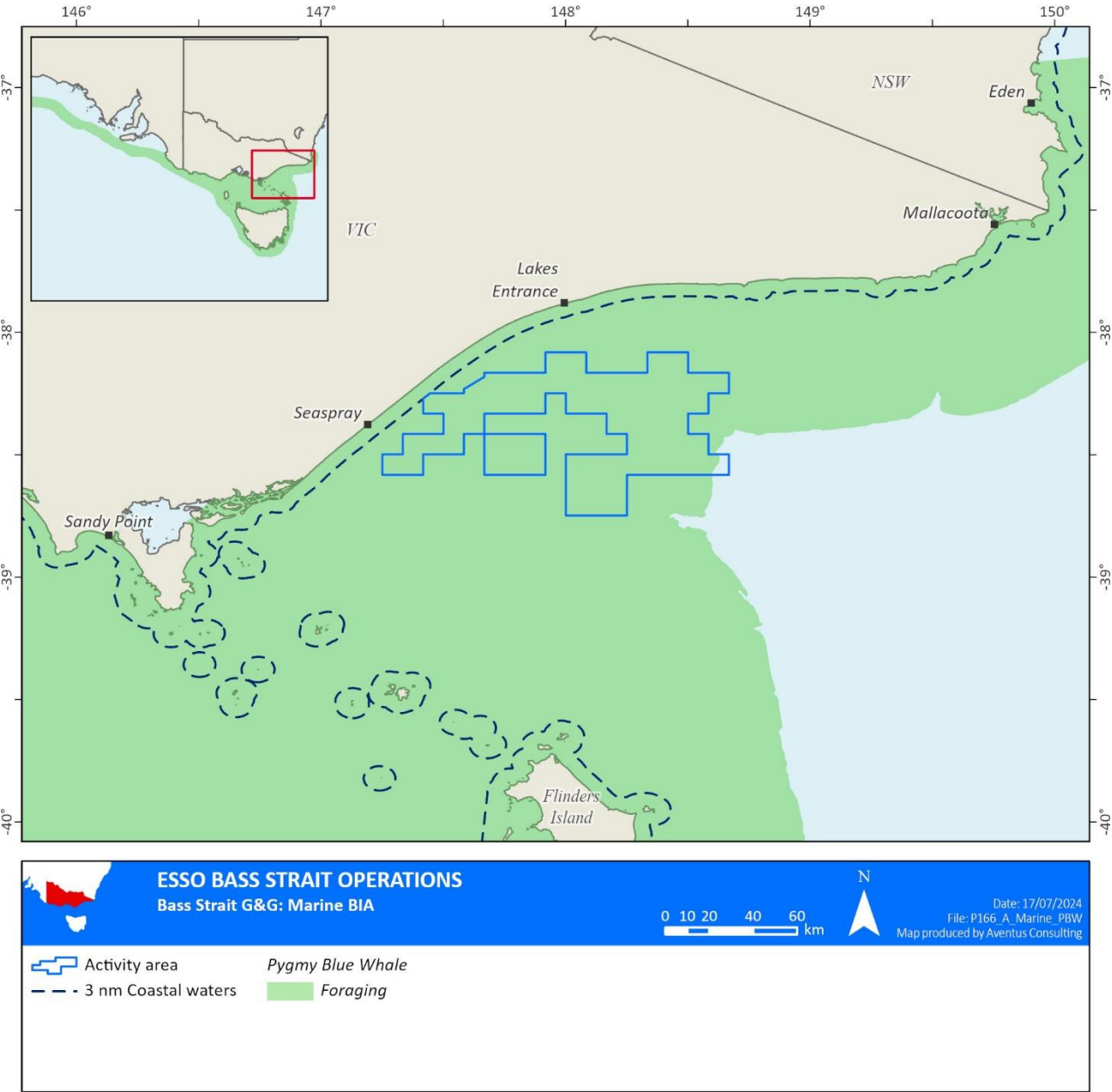


Figure 3-5 Foraging BIA for the PBW overlapped with the activity area

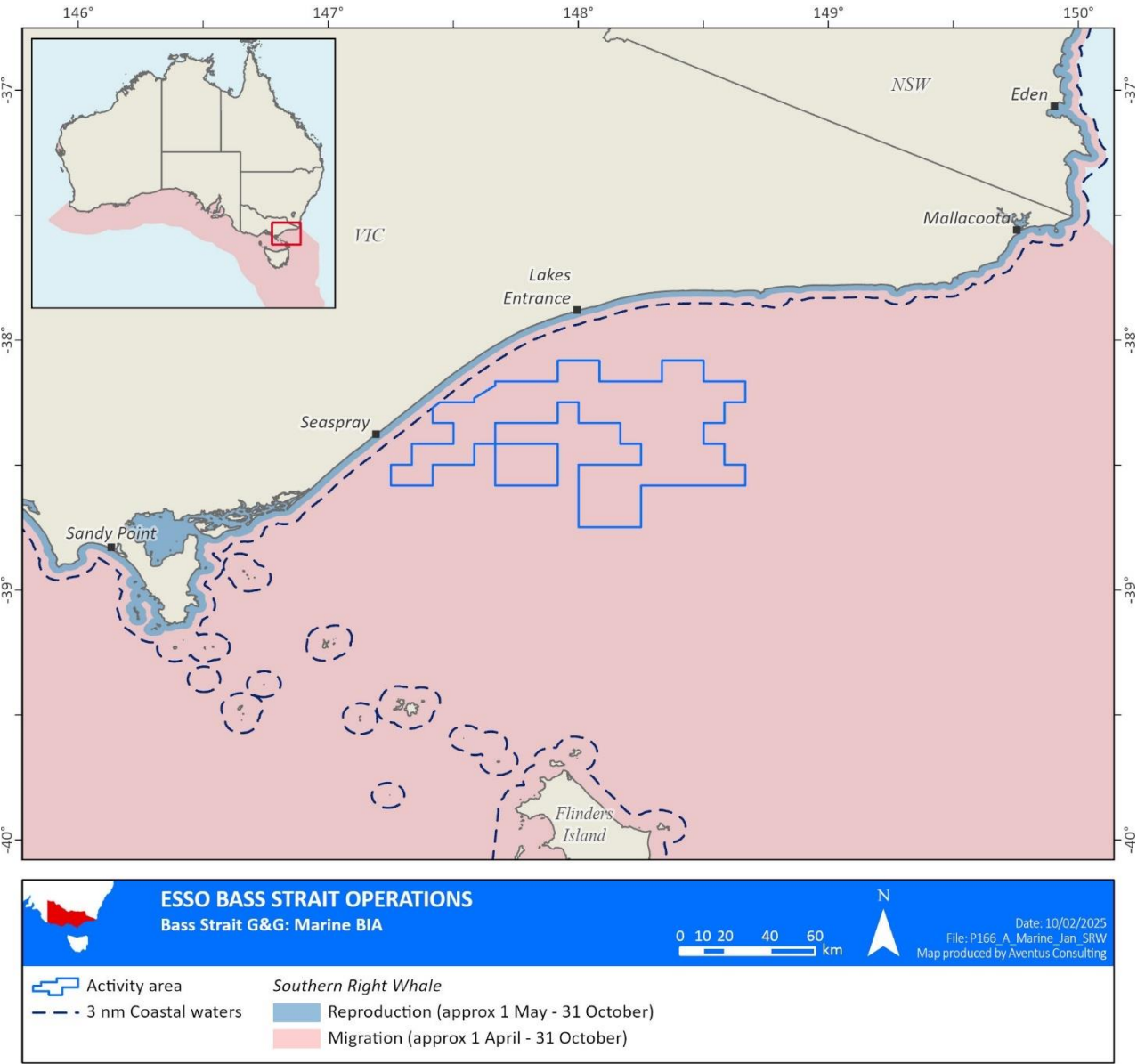


Figure 3-6 BIA for the SRW overlapped with the activity area

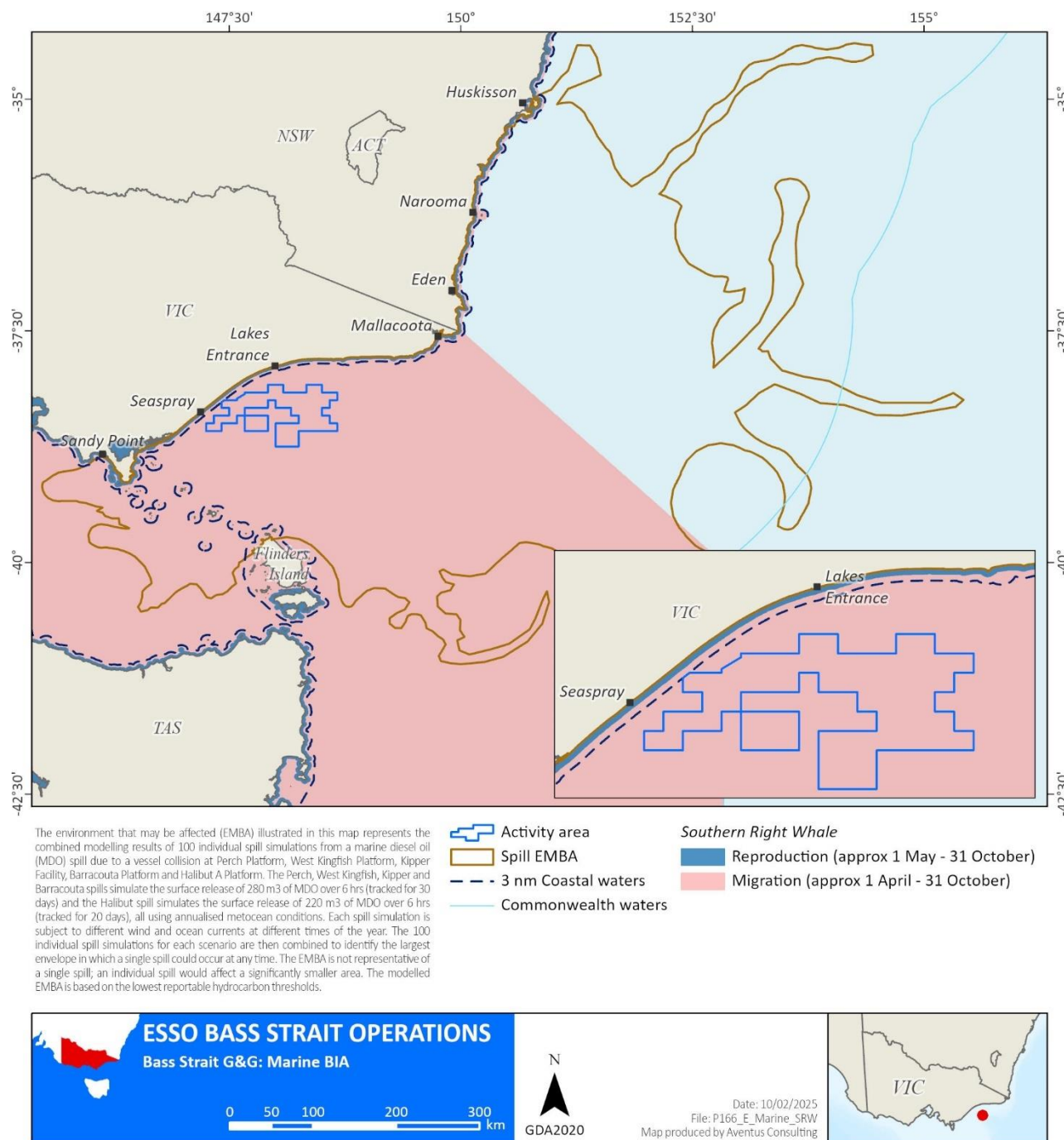


Figure 3-7 Detailed BIA for the SRW in proximity to the activity area

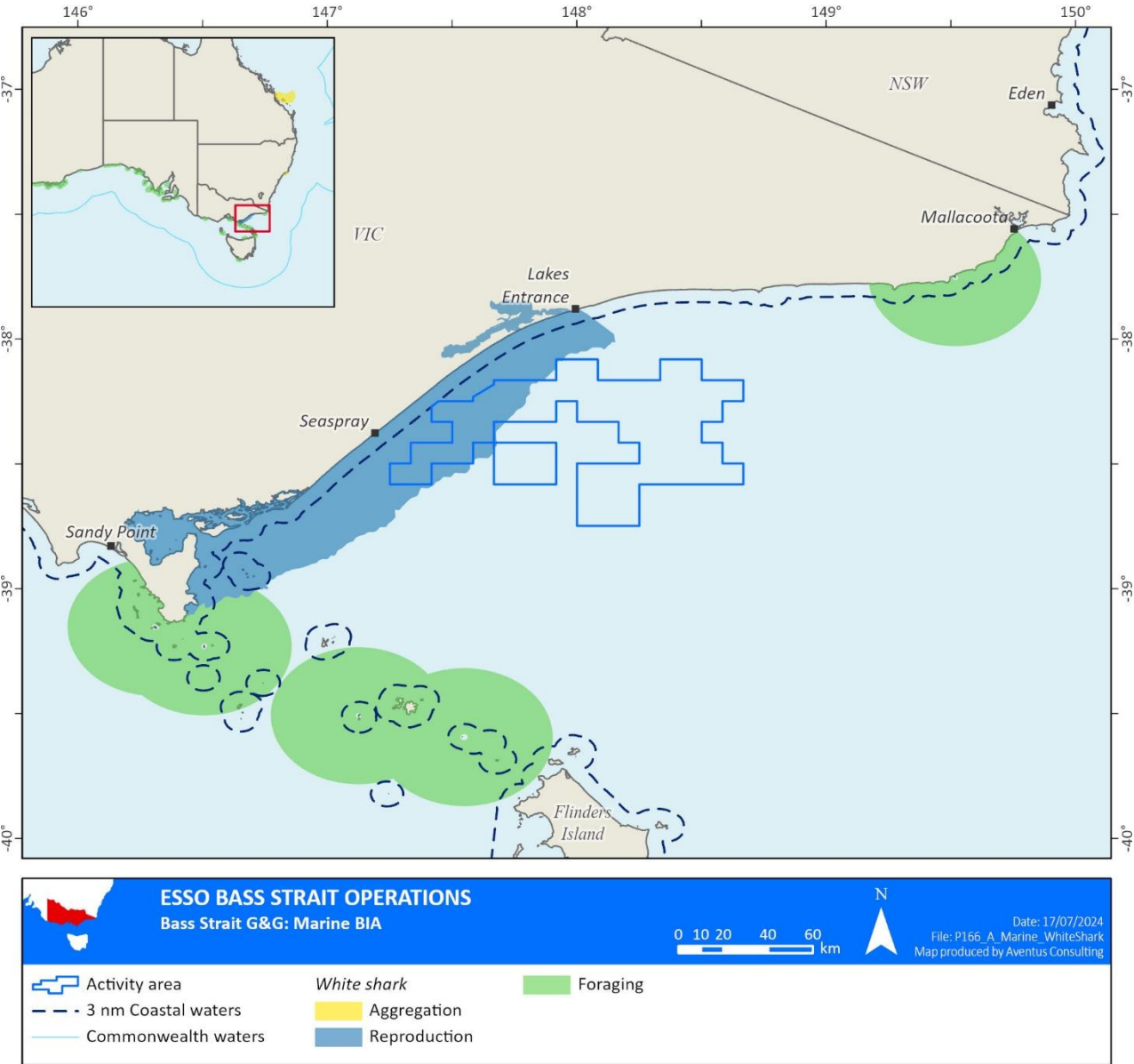


Figure 3-8 White shark BIA overlapped by the activity area

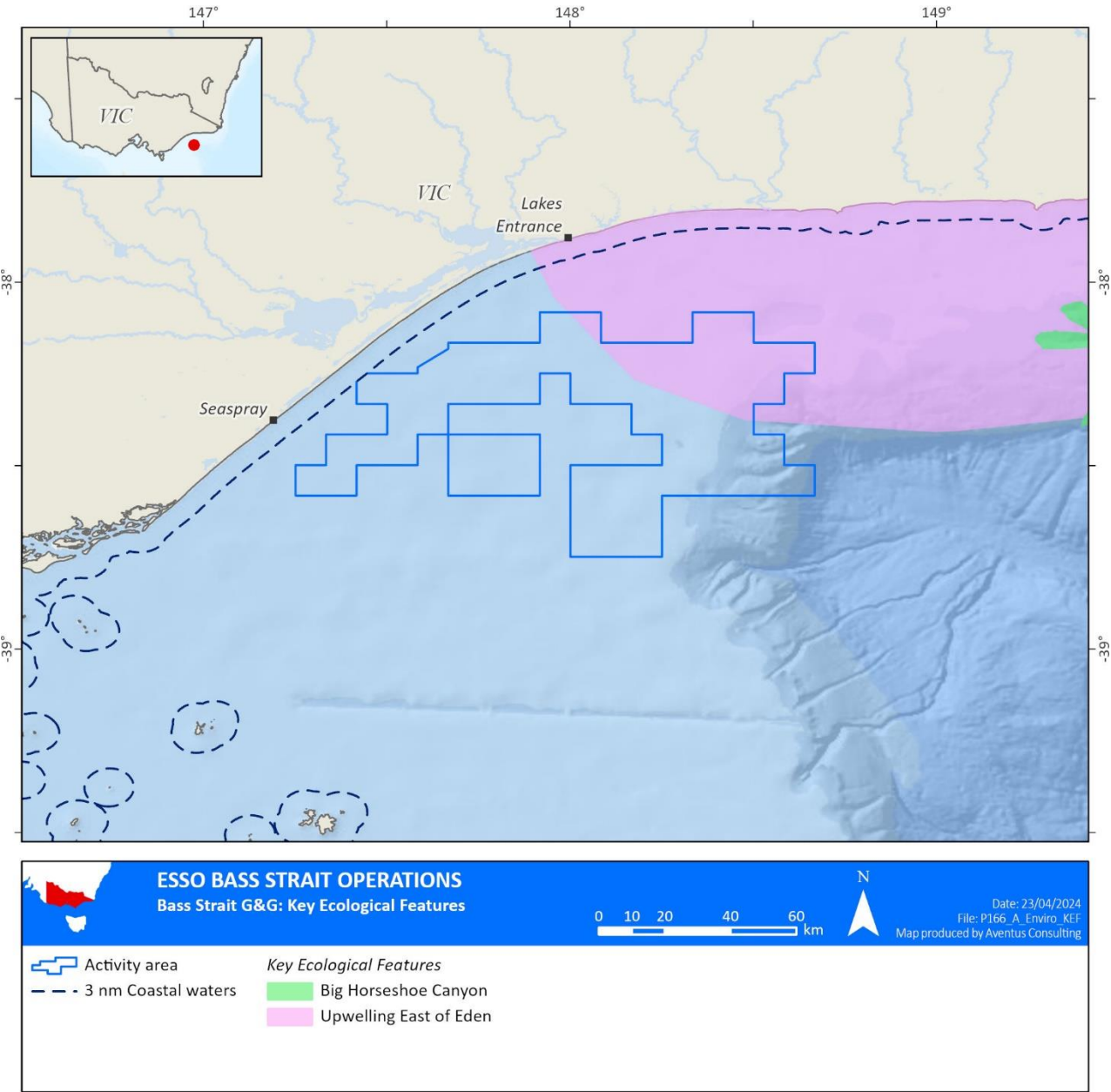


Figure 3-9 KEFs within the activity area

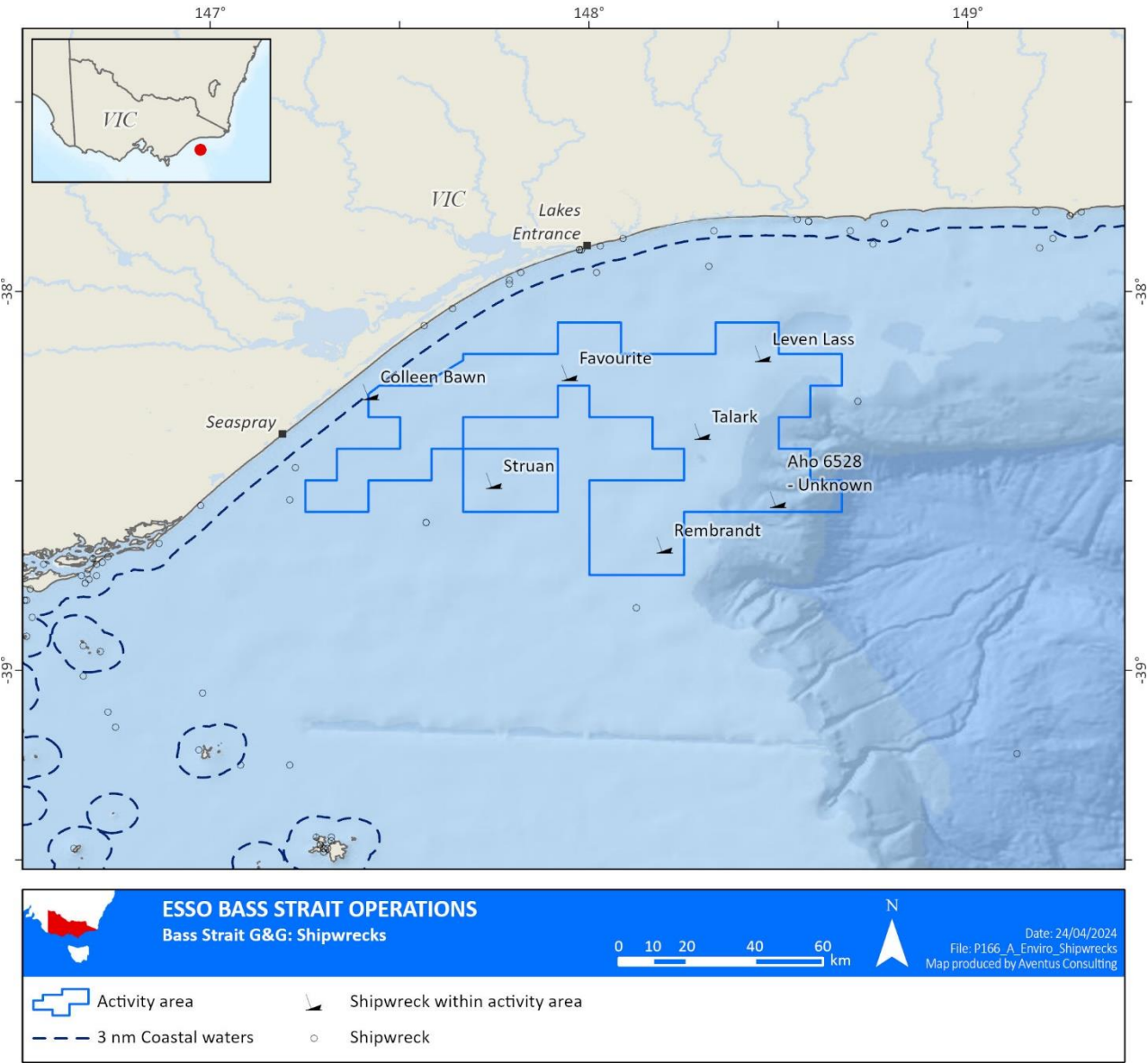


Figure 3-10 Shipwrecks within the activity area

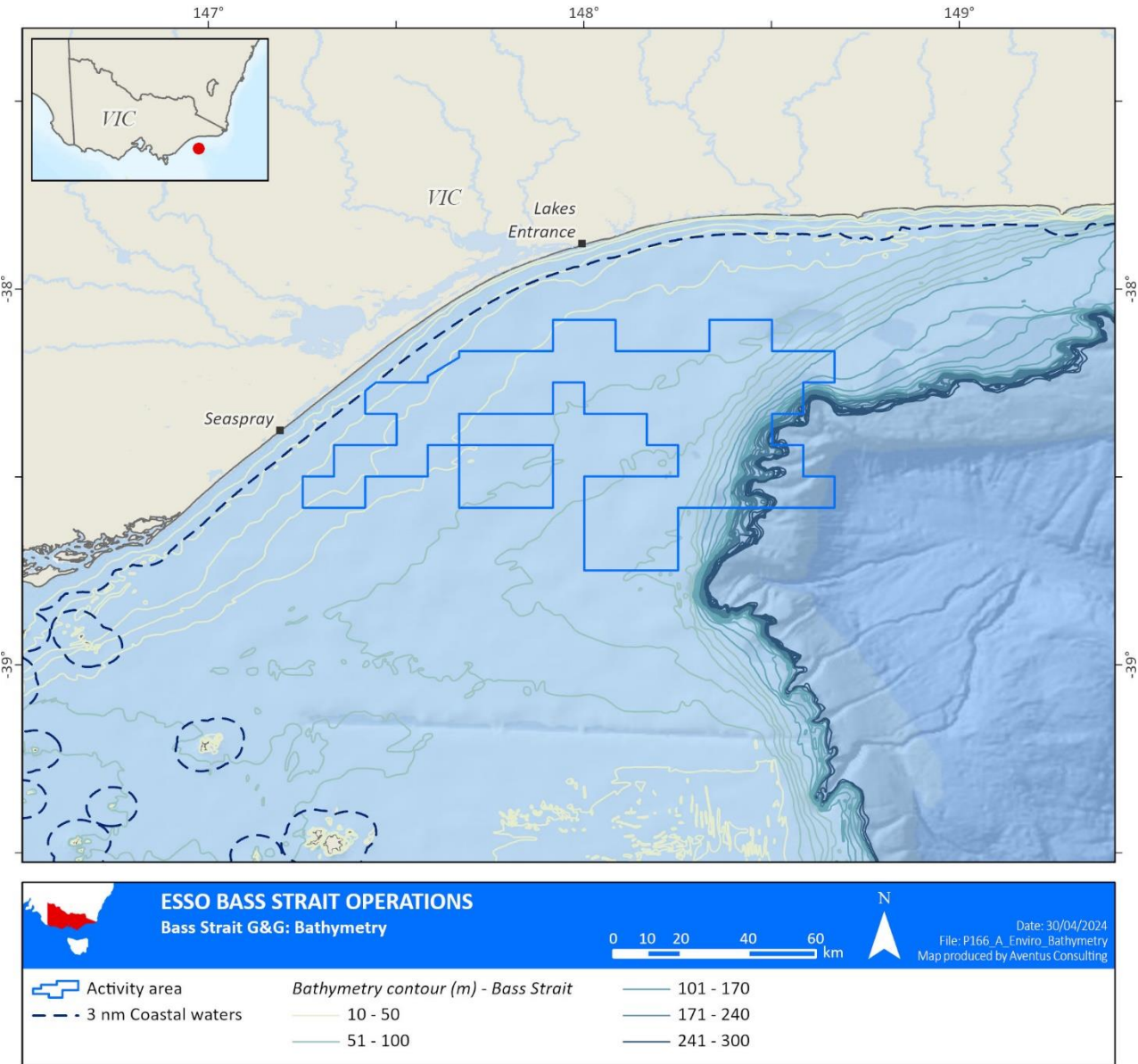


Figure 3-11 Bathymetry within the activity area

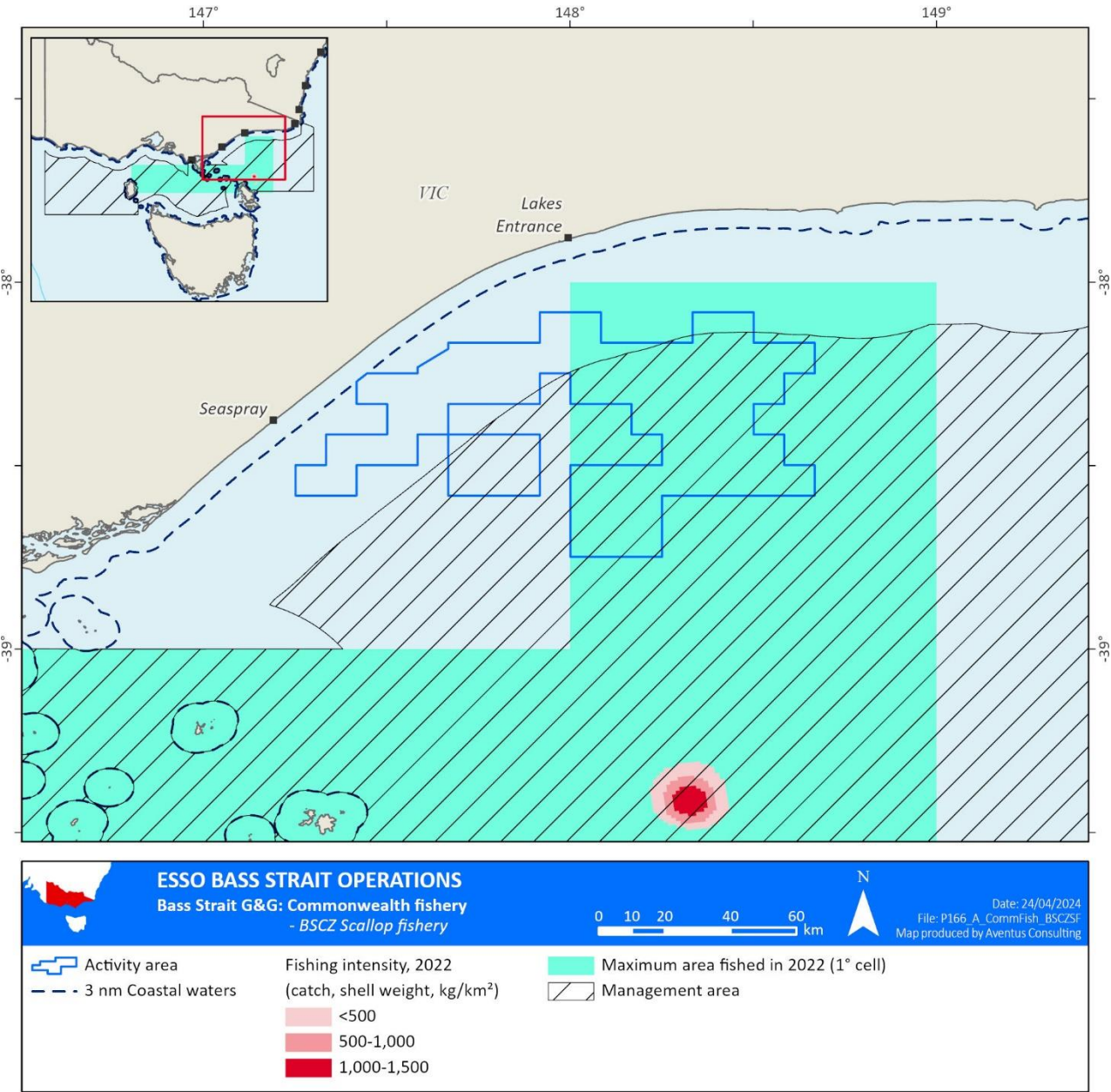


Figure 3-12 Bass Strait Central Scallop Zone Fishery jurisdiction and 2022 fishing intensity overlapped by the activity area

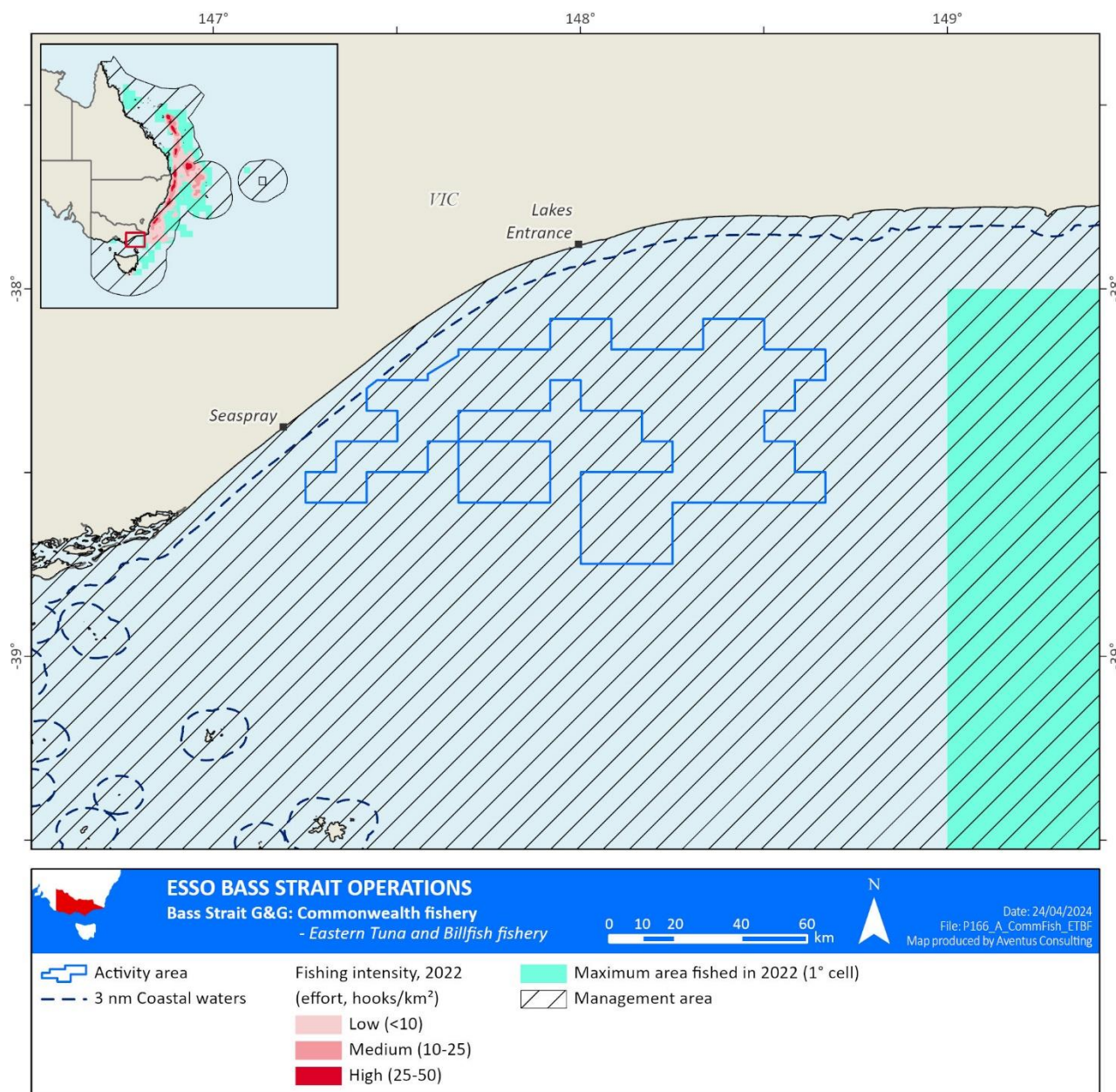


Figure 3-13 Eastern Tuna and Billfish Fishery jurisdiction and 2022 fishing intensity overlapped by the activity area

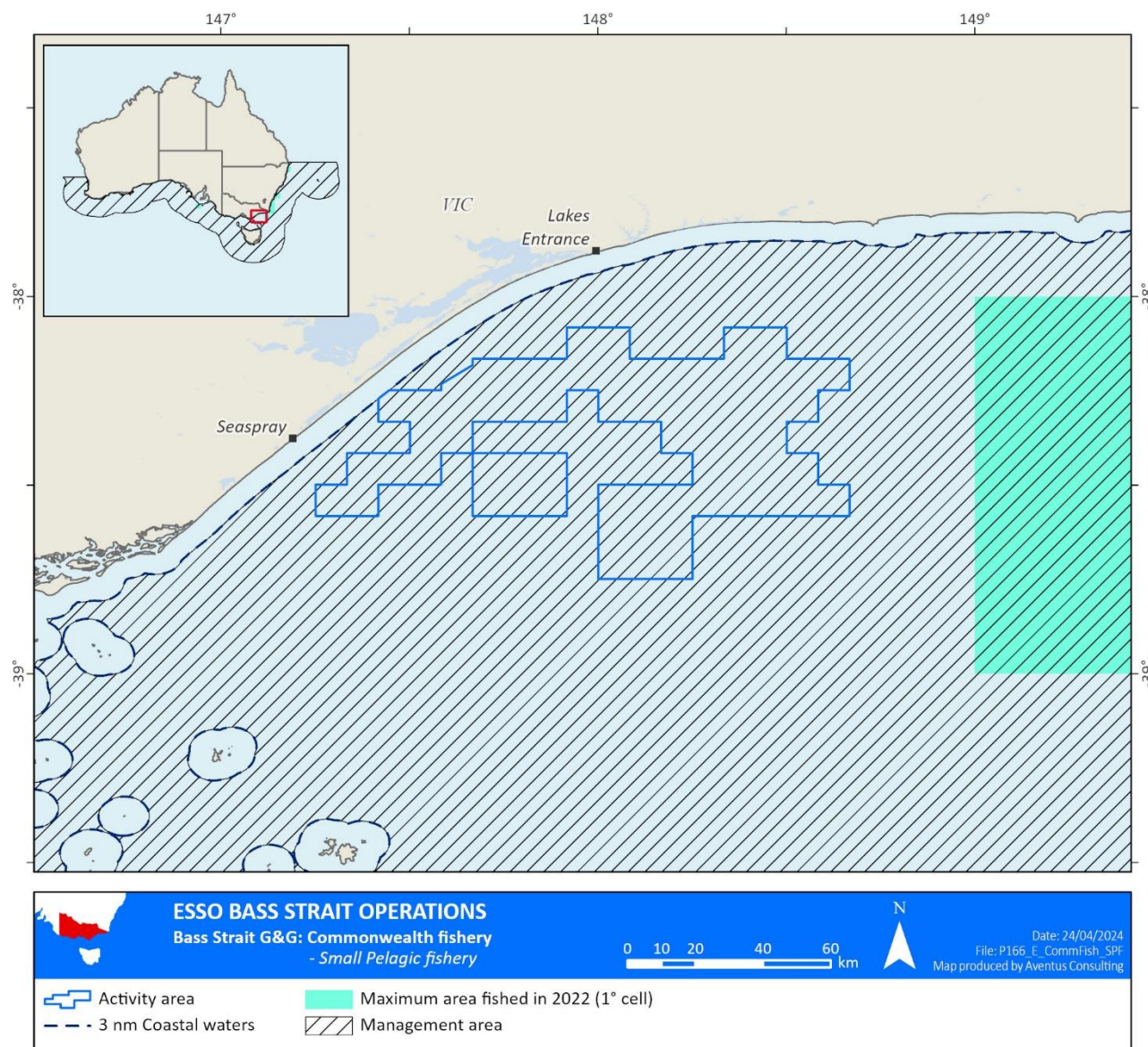


Figure 3-14 Small pelagic fishery jurisdiction and 2022 fishing intensity overlapped by the activity area

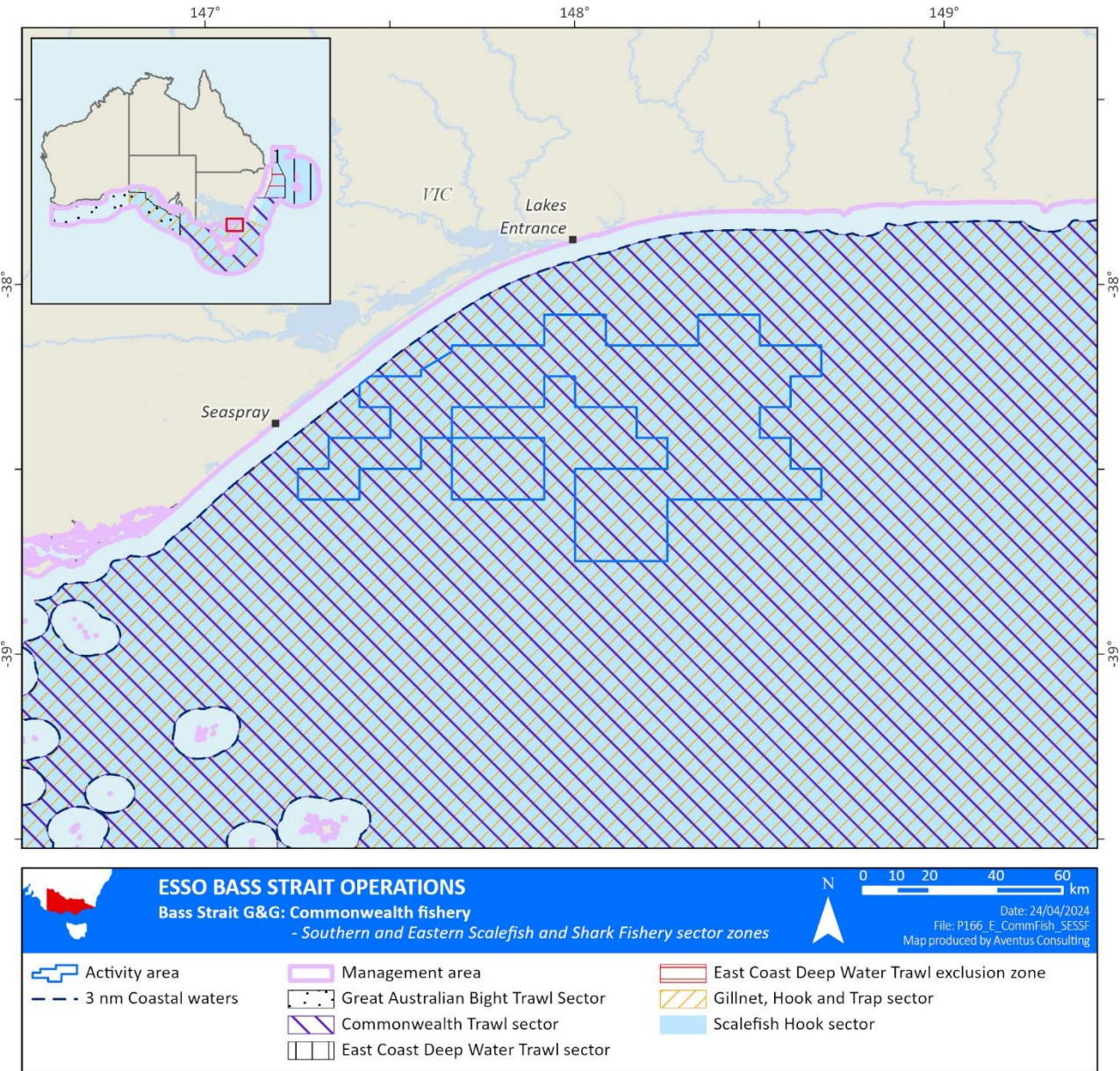


Figure 3-15 Southern and Eastern Scalefish and Shark Fishery jurisdiction overlapped by the activity area

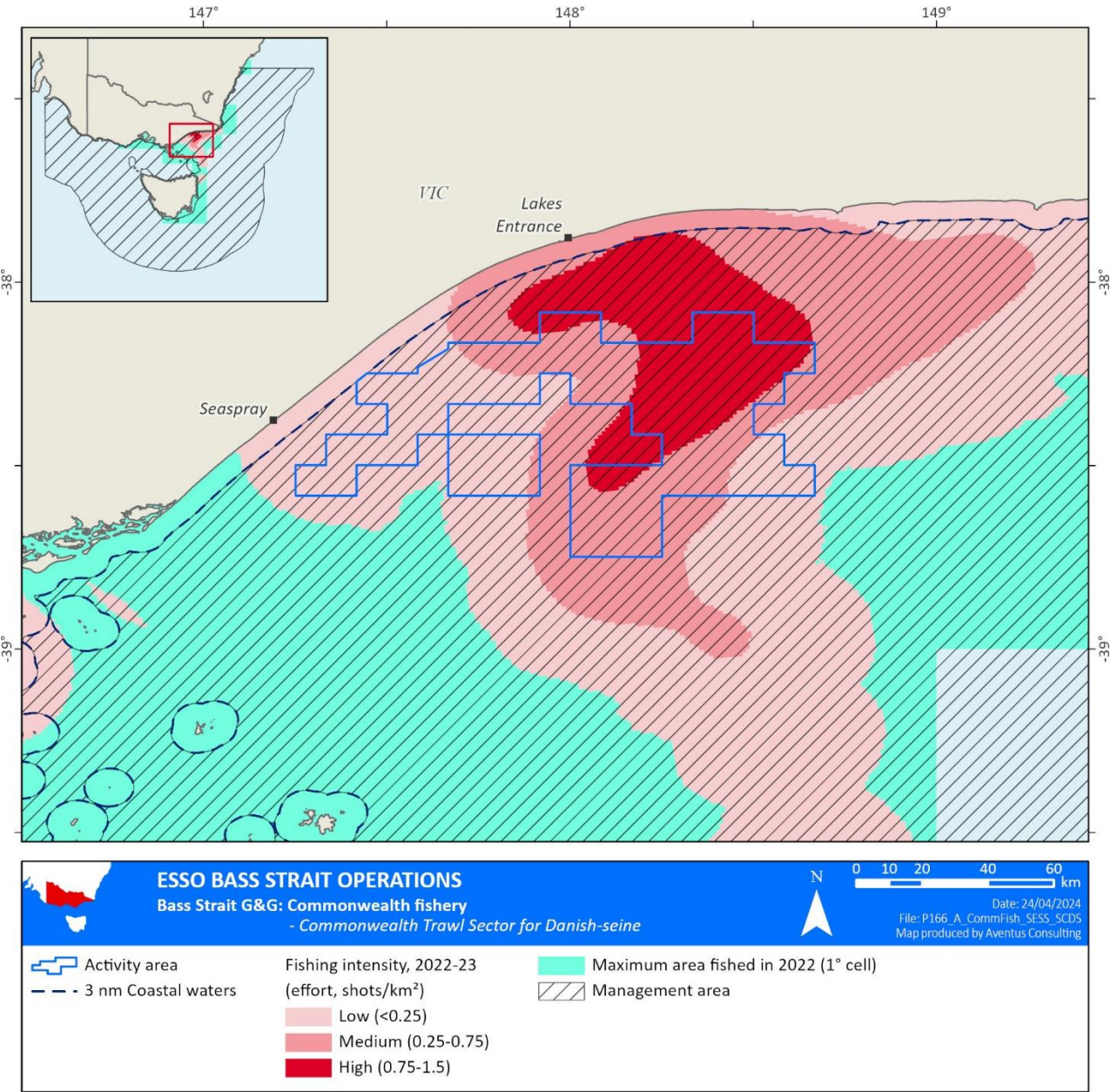


Figure 3-16 Southern and Eastern Scalefish and Shark Fishery CTS Danish-seine jurisdiction and 2022 fishing intensity overlapped by the activity area

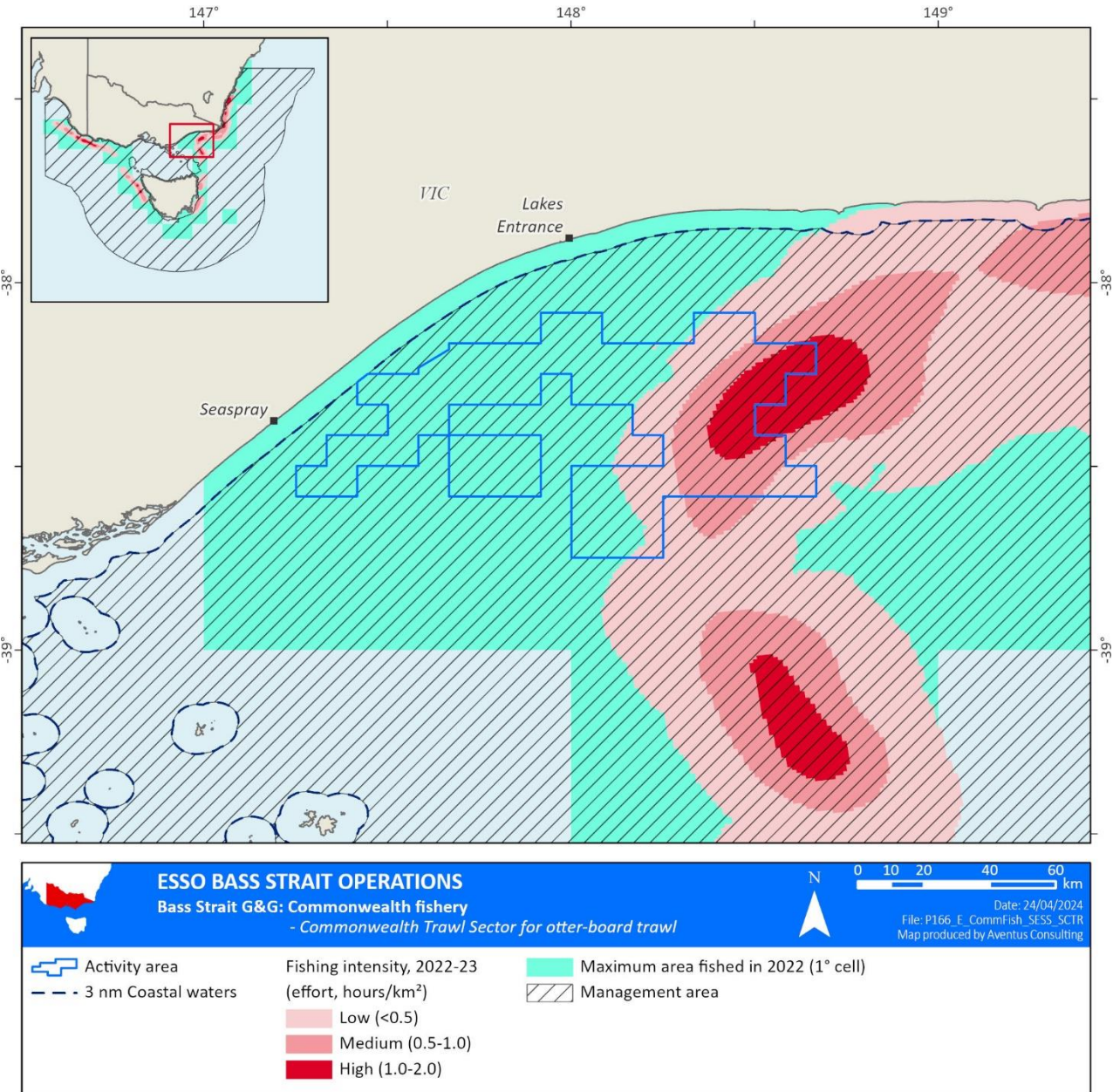


Figure 3-17 Southern and Eastern Scalefish and Shark Fishery CTS otter-board trawl jurisdiction and 2022 fishing intensity overlapped by the activity area

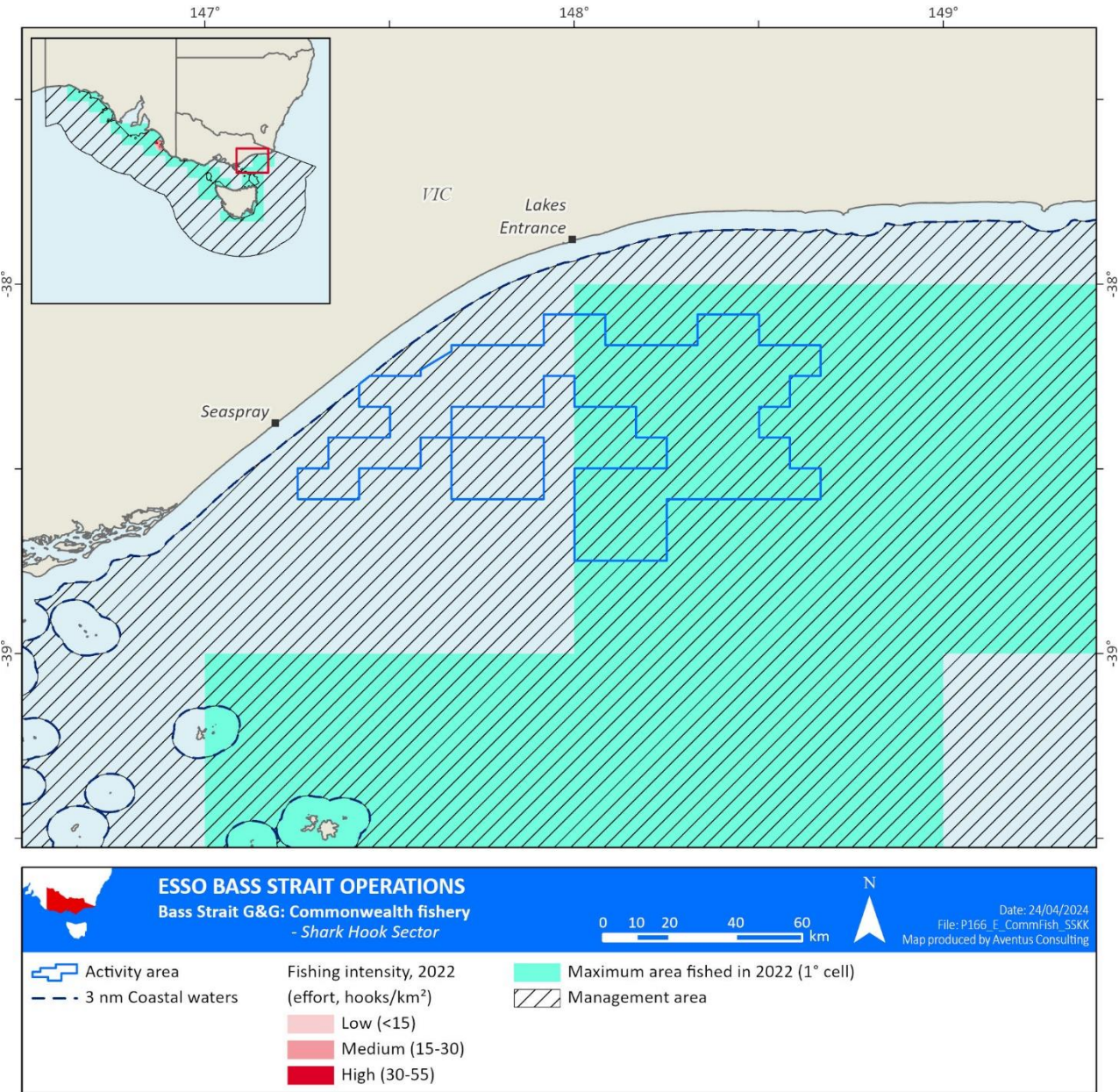


Figure 3-18 Southern and Eastern Scalefish and Shark Fishery shark hook sector jurisdiction and 2022 fishing intensity overlapped by the activity area

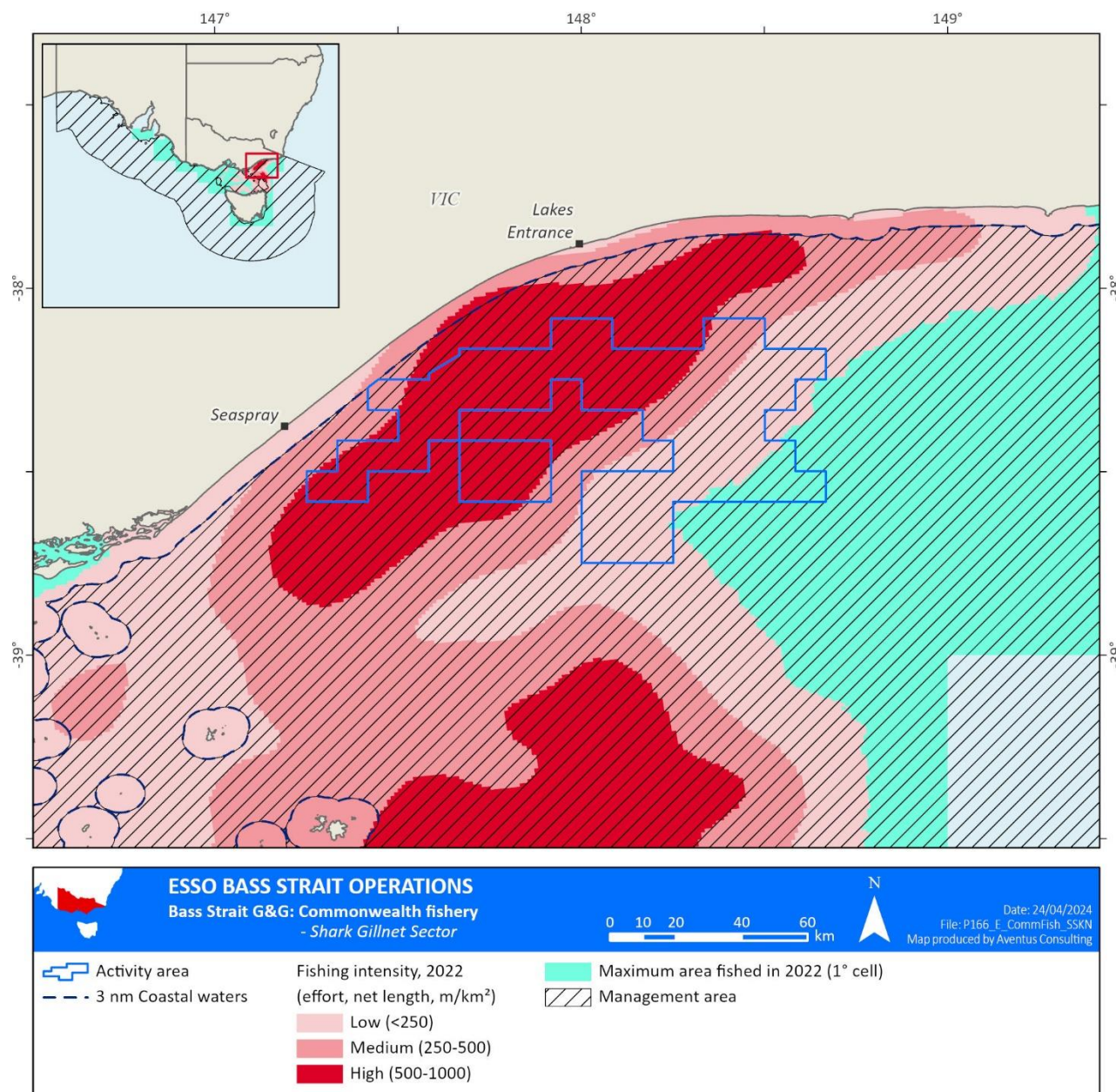


Figure 3-19 Southern and Eastern Scalefish and Shark Fishery shark gillnet sector jurisdiction and 2022 fishing intensity overlapped by the activity area

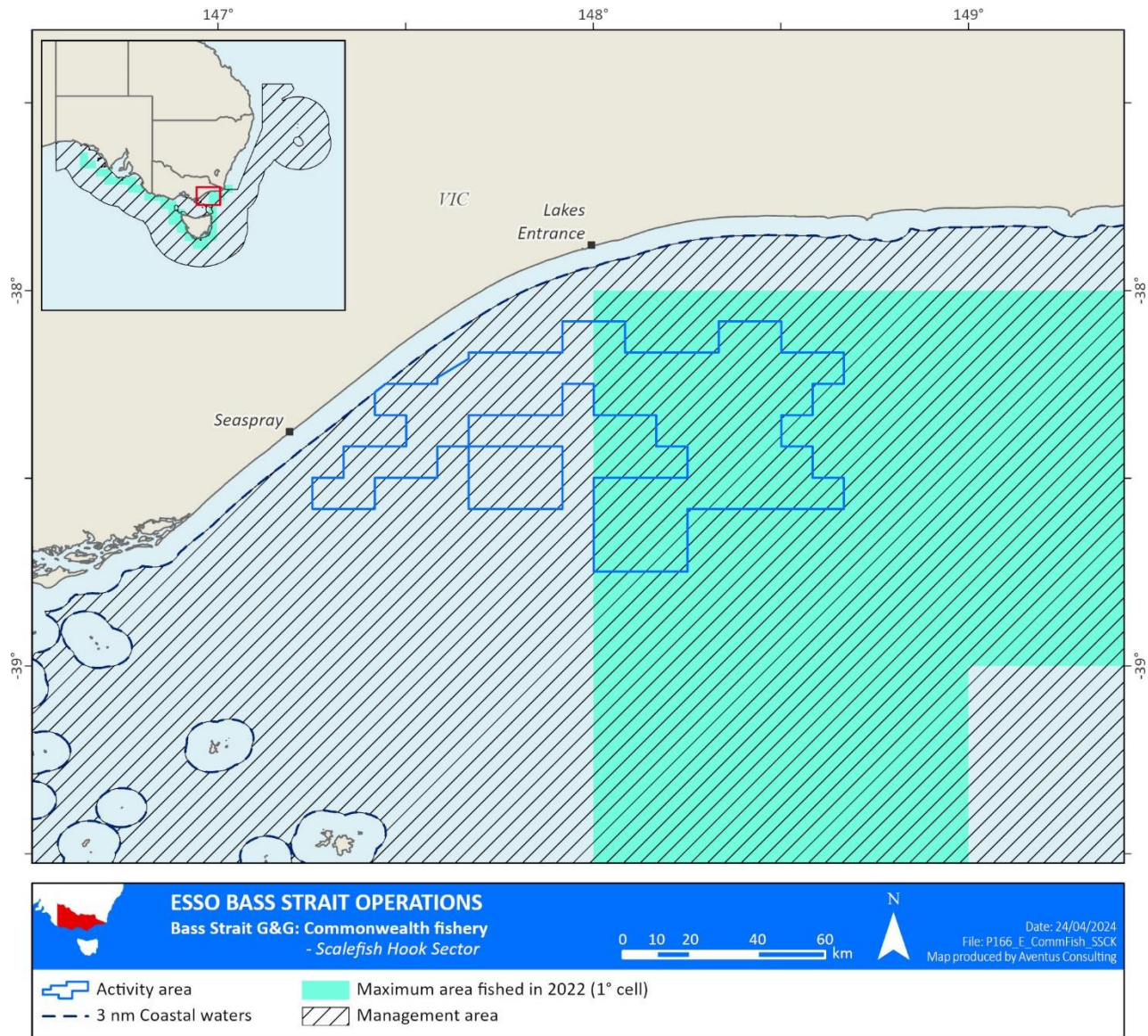


Figure 3-20 Southern and Eastern Scalefish and Shark Fishery scalefish hook sector jurisdiction and 2022 fishing intensity overlapped by the activity area

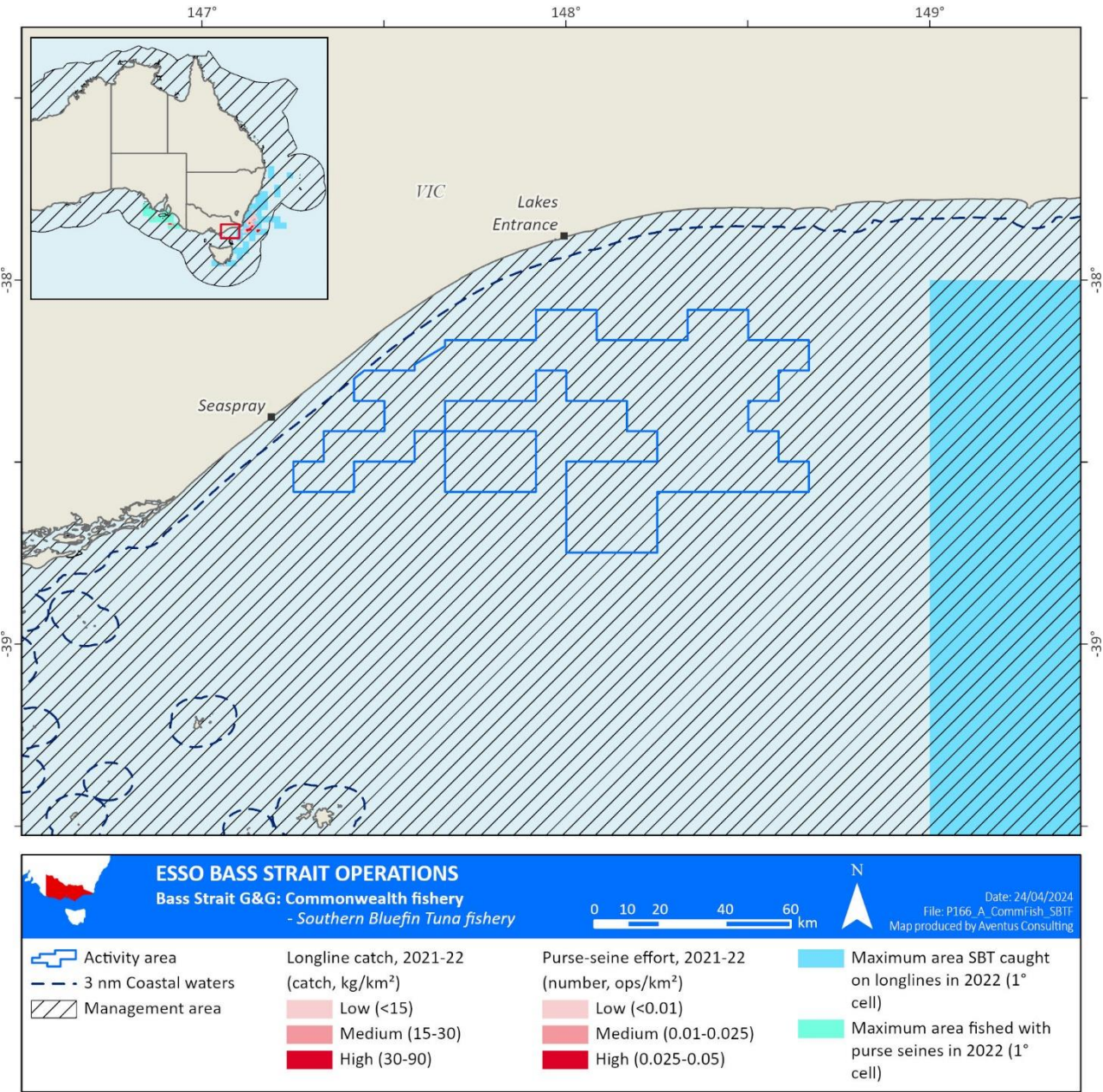


Figure 3-21 Southern Bluefin Tuna Fishery jurisdiction and 2021-22 fishing intensity overlapped by the activity area

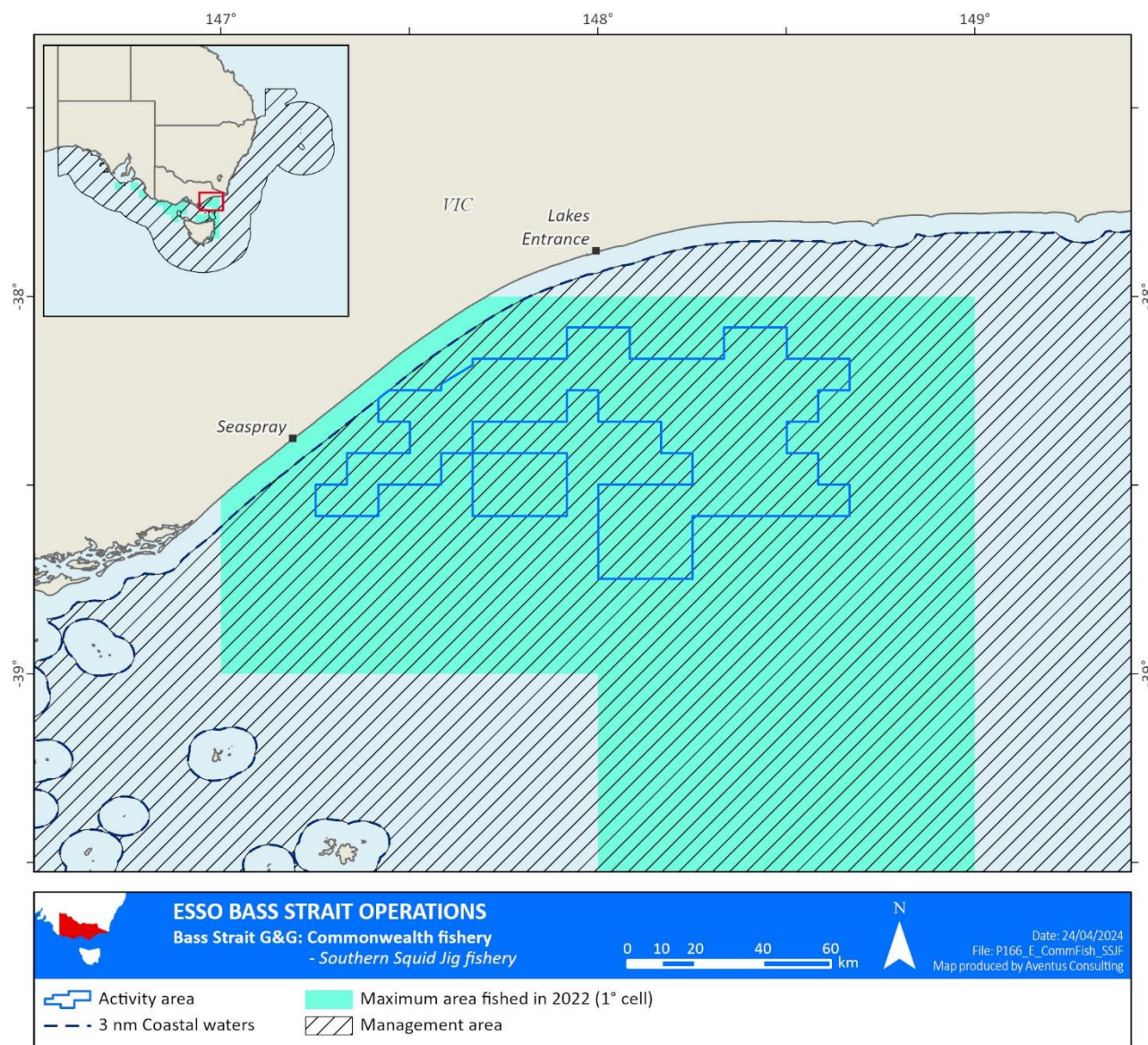


Figure 3-22 Southern Squid Jig Fishery jurisdiction and 2022 fishing intensity overlapped by the activity area

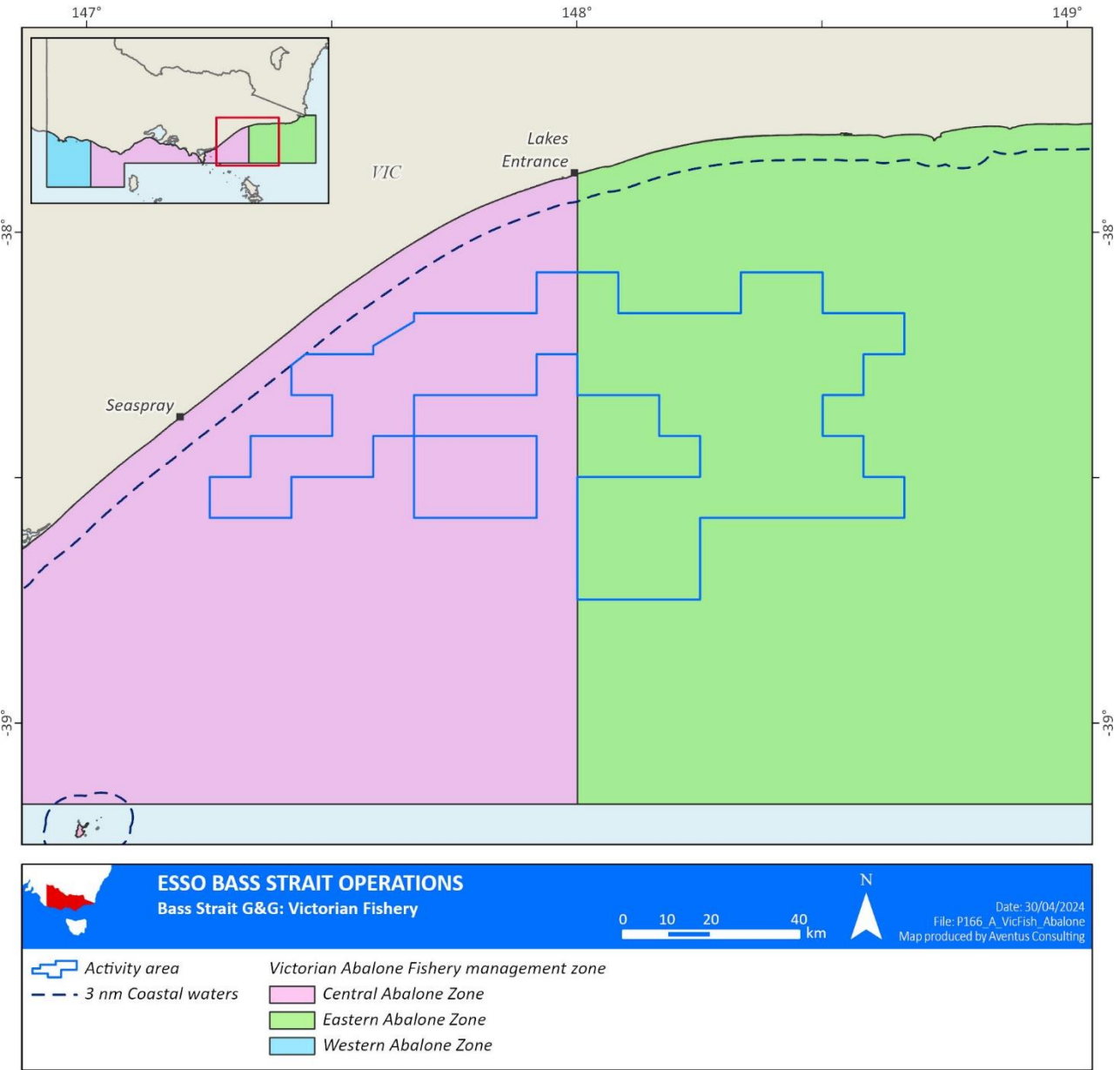


Figure 3-23 Victorian abalone fishery overlapped by the activity area

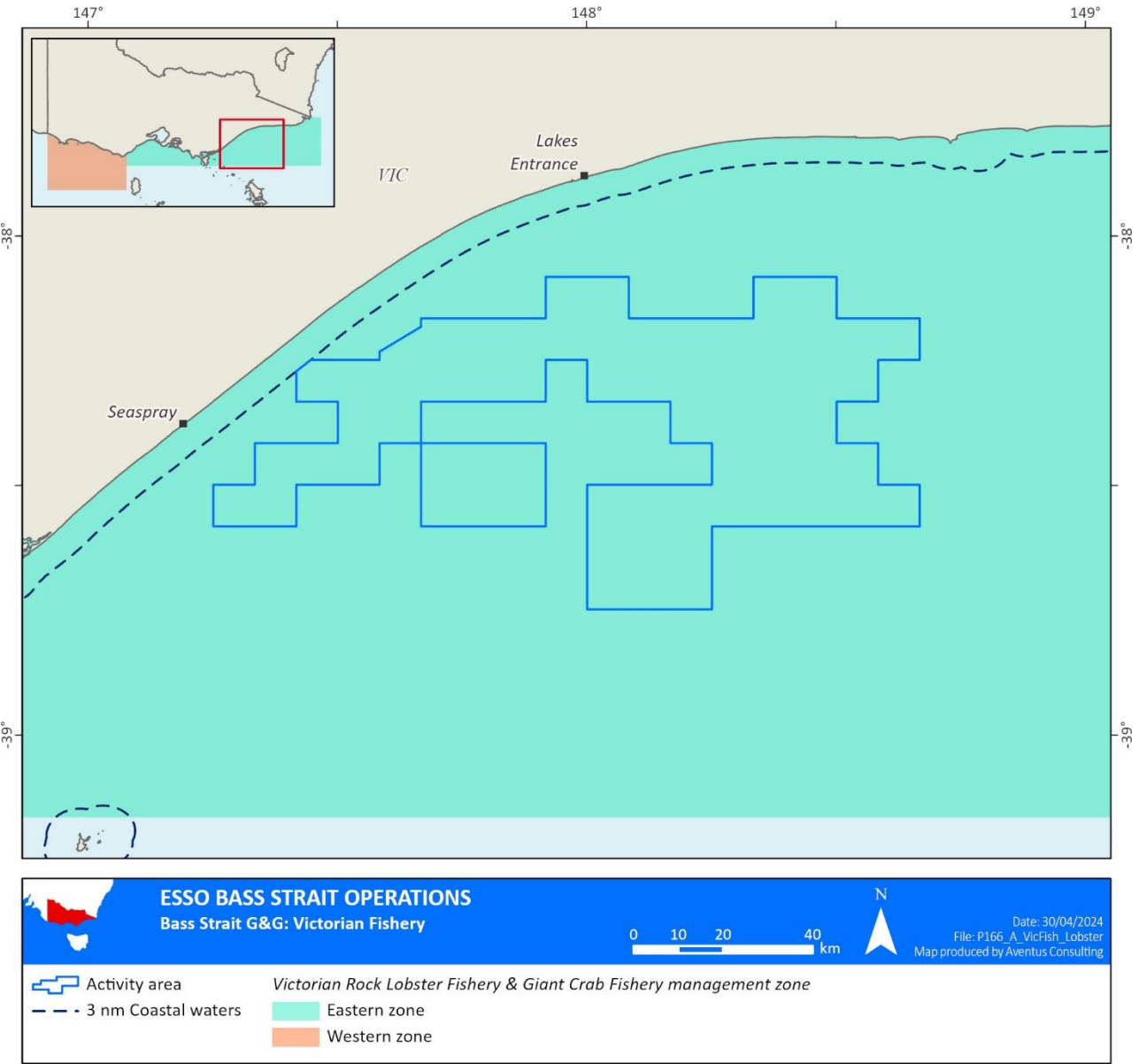


Figure 3-24 Victorian rock lobster and giant crab fishery overlapped by the activity area

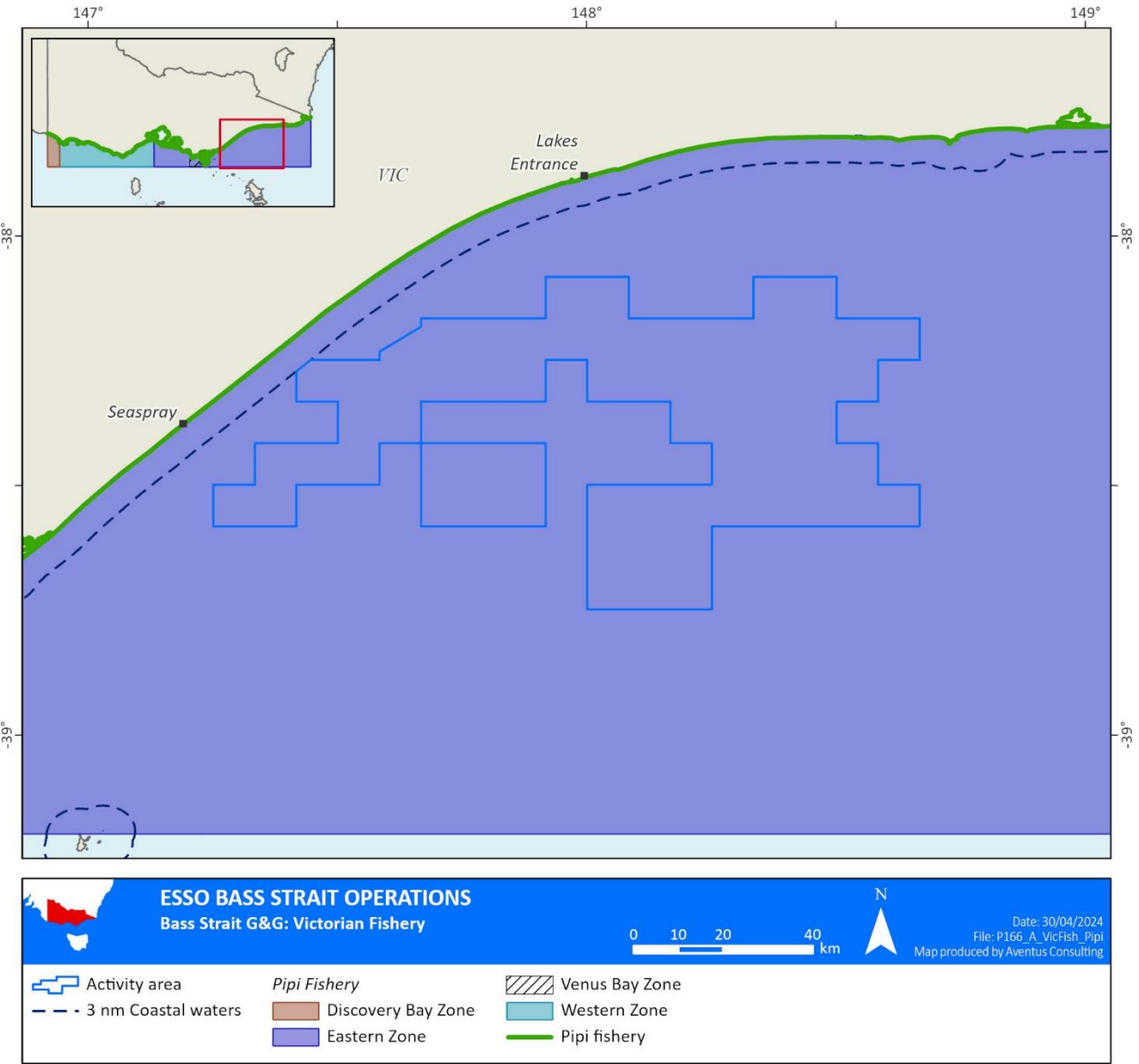


Figure 3-25 Victorian pipi fishery overlapped by the activity area

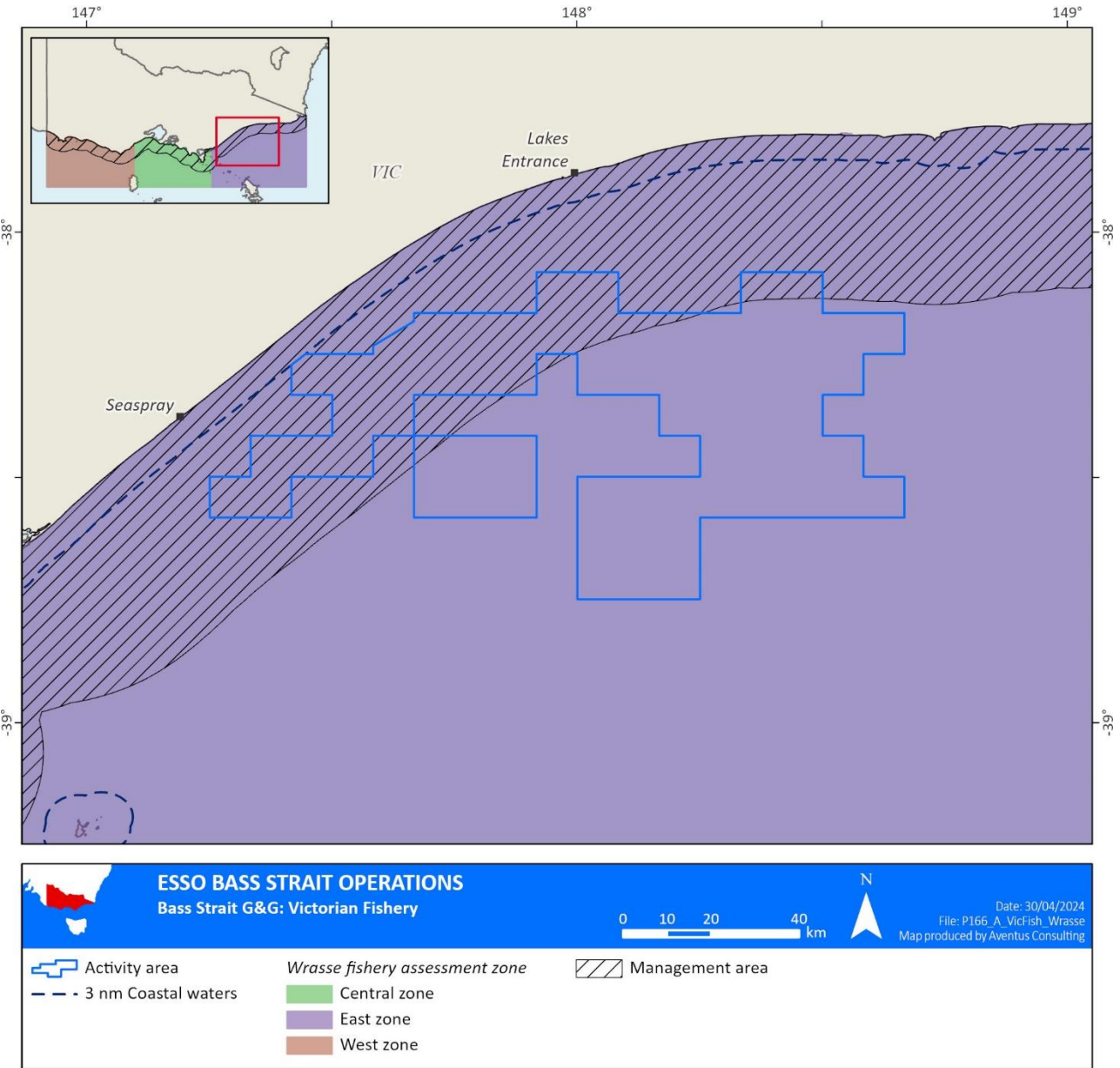


Figure 3-26 Victorian wrasse fishery overlapped by the activity area

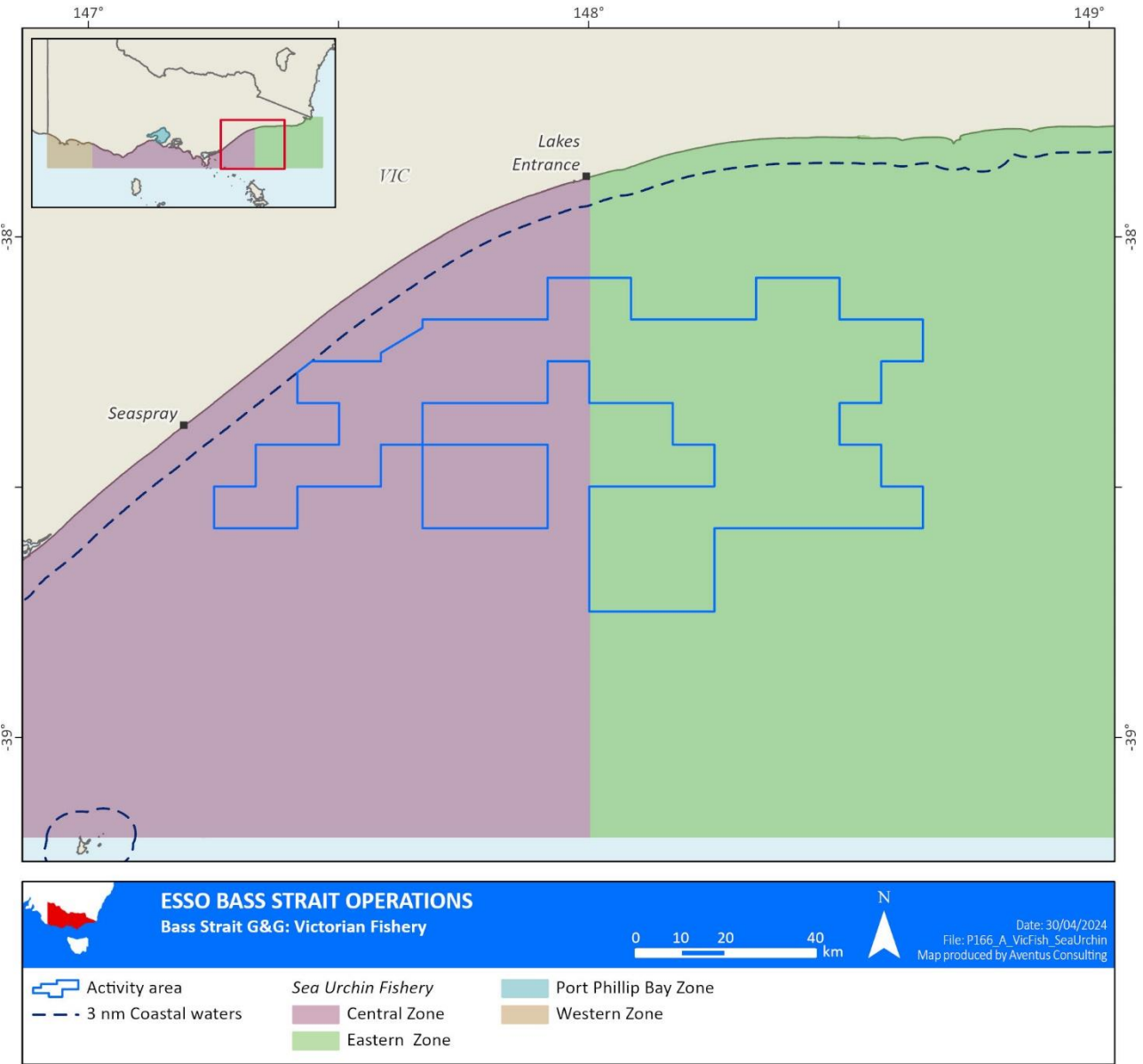


Figure 3-27 Victorian sea urchin fishery overlapped by the activity area

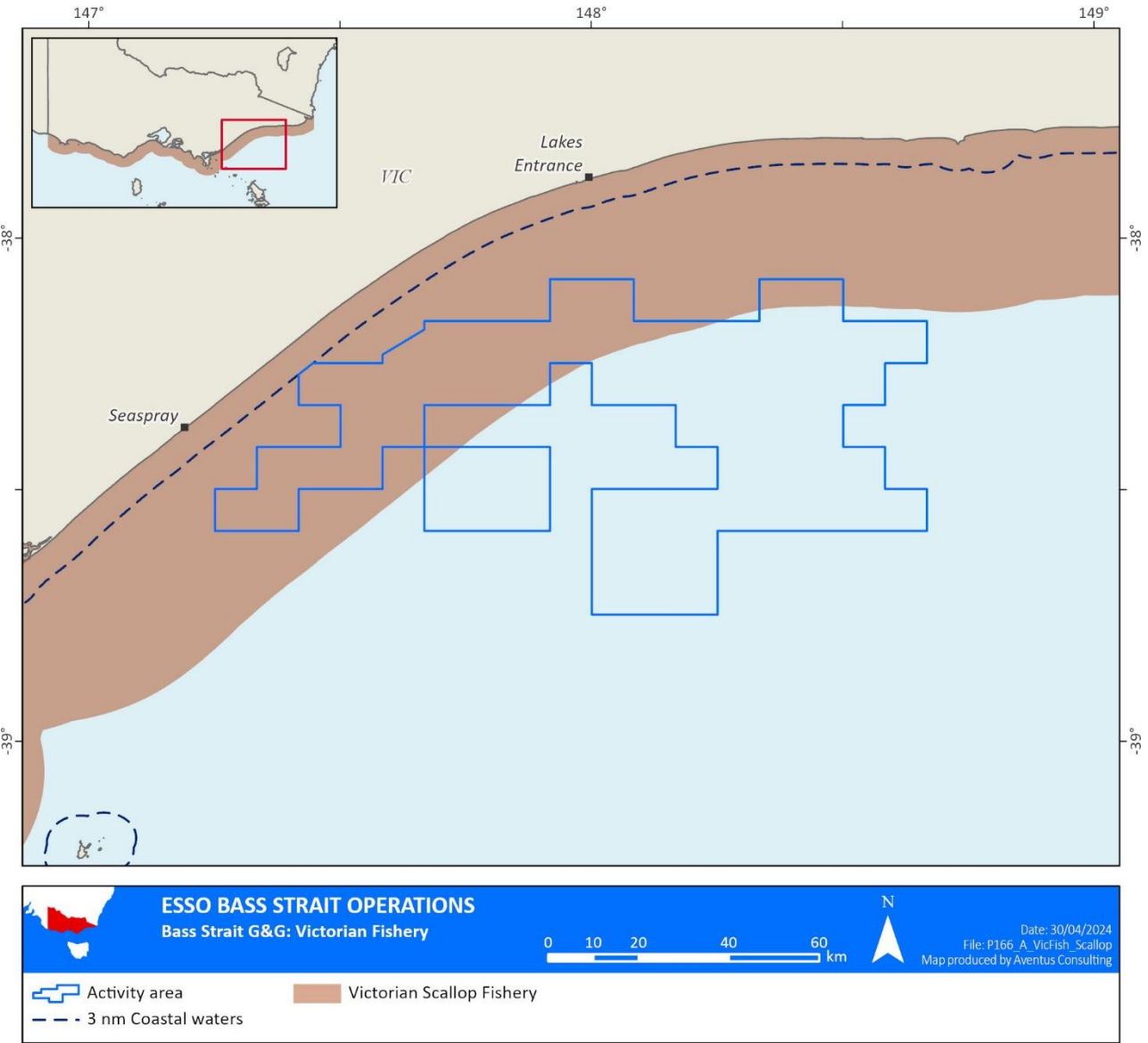


Figure 3-28 Victorian scallop fishery overlapped by the activity area



Figure 3-29 Victorian octopus fishery overlapped by the activity area

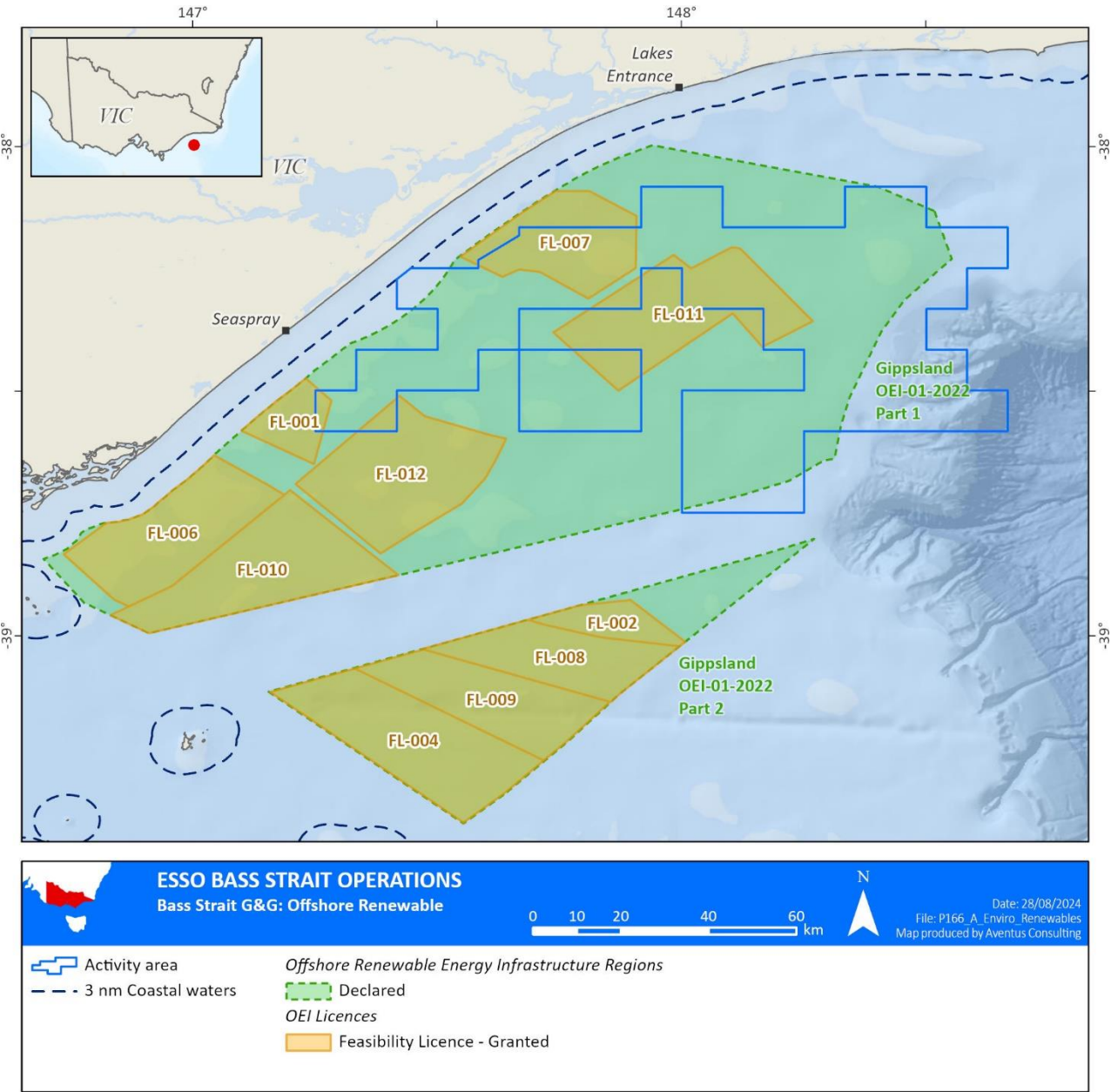


Figure 3-30 Offshore Renewable Energy Infrastructure Regions

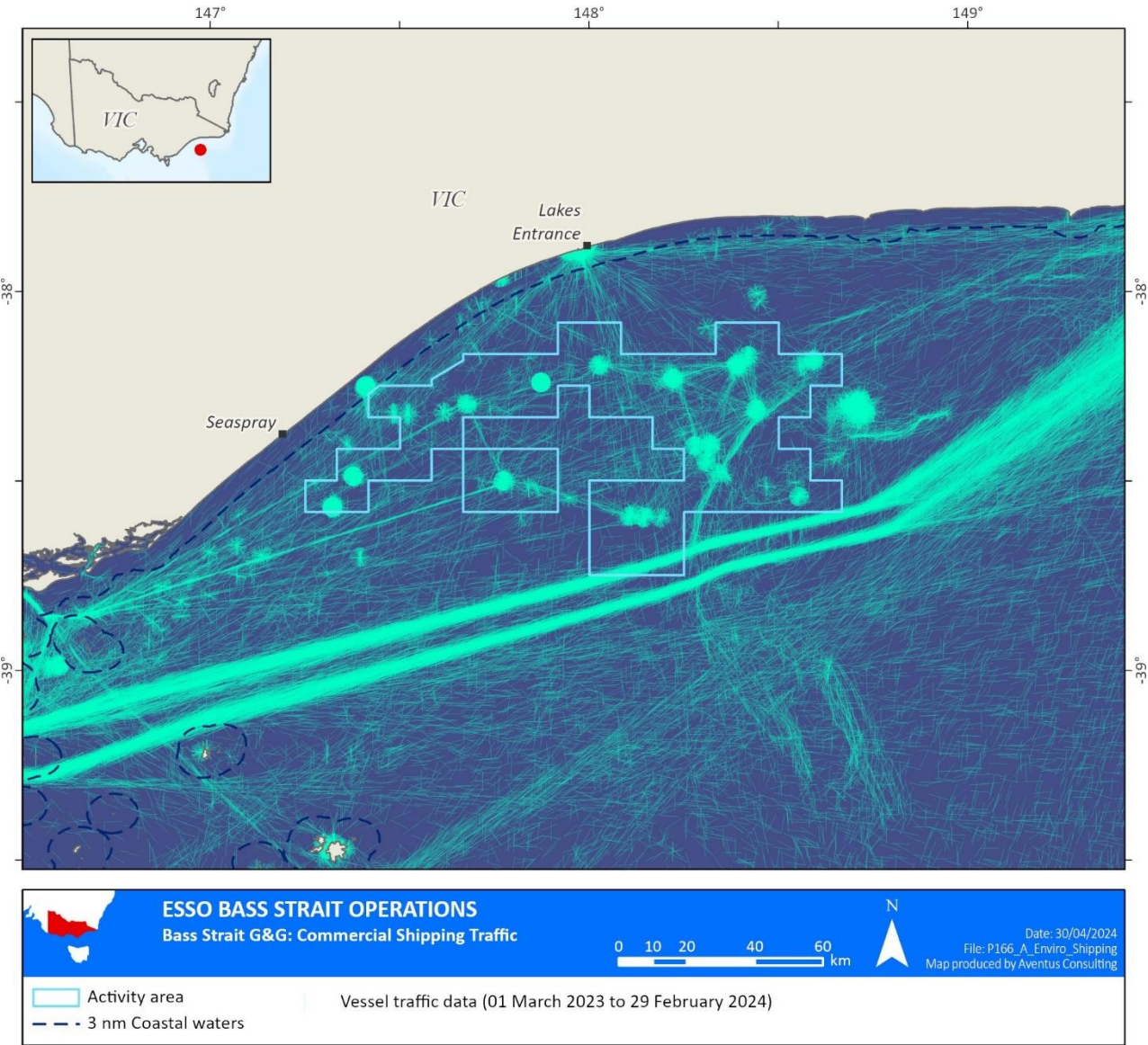


Figure 3-31 Shipping traffic within the activity area

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 20 May 2024. 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 has 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 objectives 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 regulation 25(1)(d) should be broadly construed as this approach best promotes the objects of the Regulations, including that offshore petroleum and greenhouse gas activities are carried out in a manner consistent with the principles of 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 4.2.4.

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](#)). 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 25(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: <ul style="list-style-type: none"> (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)	500m radius around vessel undertaking activity
Petroleum/greenhouse 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 to continue to undertake geophysical and geotechnical (G&G) activities periodically (not continuously) across multiple licence areas located within Commonwealth Waters in Bass Strait. The investigations are required to inform:

- plug and abandonment activities
- decommissioning
- development around existing facilities
- maintenance around existing facilities.

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.

4.2.1.2 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 EP's and the OPEP.

Persons whose functions, interests or activities are within the EMBA for the unplanned activity are provided with broad, high level information such as activity information bulletins and information regarding EMBA 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: 500m radius around platforms, subsea installations, and vessels (as described in Section 2.1).
- Bass Strait ATBA: As described in Schedule 2 of the OPGGS Act.
- The EMBA: As described in Section 3.1.

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.

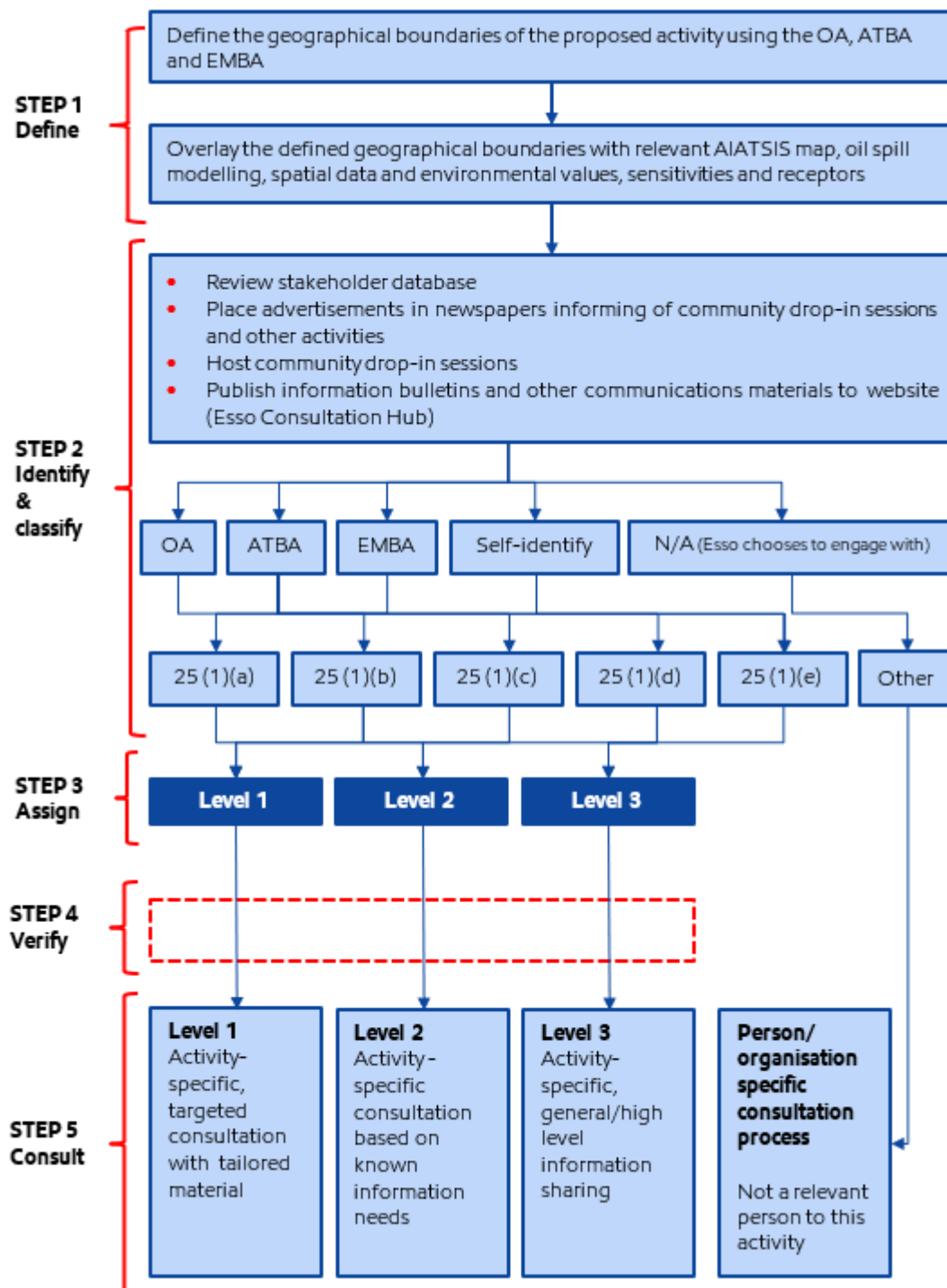


Figure 4-1 Esso's approach to consultation

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 4.2.1.3, these geographic boundaries are the:

- OA
- ATBA
- EMBA.

Each of the defined geographical boundaries are then overlayed 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 25(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)-(b) 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.

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)-(b) 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 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

Esso considers certain groups require specific approaches to consultation as outlined below.

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 (DCCEE, 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.

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 metres 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.

SEA COUNTRY

In April 2021, the Sea Country 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.

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 25(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 EMBA) 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 EMVA 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)-(b) 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.

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 EMBA 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 EMBA 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 EP's activity.

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 G&G 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 3.2
- 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).

For this EP, Esso has used the following geographical boundaries to define EP consultation:

- OA: The 500m radius around each area where the individual activity will take place (at any location within the activity area)
- Bass Strait ATBA: As described in Schedule 2 of the OPGGS Act.
- The EMBA: As described in Section 3.1.

The planned activity for this EP is to continue to undertake geophysical and geotechnical (G&G) activities periodically (not continuously) across multiple licence areas located within Commonwealth Waters in Bass Strait. The investigations are required to inform:

- plug and abandonment activities
- decommissioning
- development around existing facilities
- maintenance around existing facilities.

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](#).

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

To identify relevant persons in accordance with Regulation 25(1)(a)-(b), 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 Regulation 25(1)(a)-(b) 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)-(b)	Search for any Commonwealth or State departments, agencies or ministers related to any of the values and sensitivities listed in Volume 2 Section 4 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.
Seek advice of First Nations Groups	Met with Koori Heritage Trust to discuss cultural heritage and sea country. Consultation Hub including information bulletin and Esso Consultation Questionnaire provided to all First Nations identified in the EMBA. 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).

Method	Description
	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. Continued engagement with Gunaikurnai Land and Waters Aboriginal Corporation.
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	Google, social media platforms using the geographical boundaries of the EMBA. Search for any potentially relevant persons related to any of the values and sensitivities listed Section 3.2. Search using methodology in Section 4.2.4.1.
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 G&G activity, include:

- the various locations of the OA's
- the well sites are located within existing Commonwealth fisheries that may be used by commercial fishers
- the 500 m radius 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 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, 6 and 7 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.

4.3.4 *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-1](#) 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 ¹⁸⁷	Incorporated association representing commercial fishers in Commonwealth South East Trawl Sector; Scalefish Hook Sector; Shark Hook, Shark Gillnet Sectors; small pelagic fishery.
SIV ¹⁸²	Representative peak body for the Victorian seafood industry, from professional fishers, through to wholesalers, processors, and retailers.
LEFL ⁸⁰ (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

G&G consultations began in February 2024 using various methods and continued until resubmission in October 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. 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.

The G&G information bulletin (refer to [Appendix F](#)) was shared with stakeholders on 28 March 2024.

A follow up email was sent to Consultation Level 1 Relevant Persons on 25 April 2024 sharing the information bulletin again and providing a reminder of EP submission dates for all proposed activities including the G&G EP.

In addition to the provision of information bulletins, Esso undertook the following consultations with all stakeholders.

- May 2024: Email sent to stakeholders reminding them of various offshore activities proposed by Esso including G&G.
- June 2024: Email sent to stakeholders reminding them of various offshore activities proposed by Esso including G&G.
- July 2024: Email sent to stakeholders reminding them of various offshore activities proposed by Esso including G&G.
- August 2024: Email sent to newly identified Feasibility Licence stakeholders advising of EP.

- September 2024: Email sent to stakeholders reminding them of various offshore activities proposed by Esso including G&G.

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 provided 10 community sessions in the Gippsland area:

SESSION	DETAILS	ATTENDEES
1	Thursday 29 February 2024 Between 5.00 pm - 6.30 pm The Bellevue Hotel, Lakes Entrance	5
2	Wednesday, 29 May 2024 Between 5.00 pm and 6.00 pm The Criterion Hotel, Sale	10
3	Thursday 30 May 2024 Between 5.00 pm and 6.00 pm Bellevue on the Lakes, Lakes Entrance	3
4	Wednesday 21 August 2024 Between 5.00 pm and 6.00 pm The Criterion Hotel, Sale, 90 MacAlister Street	2
5	Thursday 22 August 2024 Between 5.00 pm and 6.00 pm Off The Wharf café, Bullock Island, Lakes Entrance	3
6	Tuesday 27 August 2024 Between 5.00 pm and 6.00 pm Welshpool Memorial Hall, 49 Main Street, Welshpool	1
7	Wednesday 28 August 2024 Between 5.00 pm and 6.00 pm Manna Gum Community House, 33 Station Street, Foster	9
8	Wednesday 25 September 2024 10.00 am – 1.00 pm Welshpool Memorial Hall 49 Main Street, Welshpool	15
9	Wednesday 25 September 2024 3.00 pm – 7.00 pm South Gippsland Trade Skills Alliance (SGBLLEN) 71 Ogilvy St., Leongatha	5
10	Thursday 26 September 2024 3.00 pm – 7.00 pm Manna Gum Community House 33 Station Street, Foster	21

To ensure every effort was made to reach relevant persons the community sessions were advertised in various news outlets. Examples of advertisements for each session are provided in APPENDIX G: Advertisement materials

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 G&G EP information and links to the Esso Consultation Hub.

Esso also conducts regular meetings with organisations and/or agency representatives of Regulation 25(1)(a)-(b) 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-2).

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 G&G EP. All communications are recorded in the relevant persons database and presented in the Consultation report (refer to Appendix E-2).

4.3.5.3 Consultation with First Nations people

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 in February 2024 as requested by GLaWAC for use during consultation with community see [Appendix F](#) (including reference to G&G EP).

Esso followed up on the G&G activity-specific consultation with GLaWAC²⁴ in March and April 2024, providing an activity overview (description, location, impacts and risks) and seeking feedback²⁴. Engagement with GLaWAC is an on-going exercise via 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 a further opportunity via email to nominate to be consulted on G&G activities but did not make this nomination. The G&G EP submission date was communicated to GLaWAC in April 2024.

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 despite the provision of detailed information, GLaWAC did not nominate to be consulted on the G&G activity, nor has GLaWAC requested any further information in relation to the G&G activity since consultation commenced in March 2024.

General engagements (beyond the G&G activity) with GLaWAC are ongoing:

- Esso and GLaWAC have established a monthly consultation meeting which covers a range of Esso activities; the format of this session is co-designed with both Esso and GLaWAC attendees
- Esso's discussions (via phone, email and in person) with GLaWAC have included Sea Country mapping, with a workshop conducted to share geospatial and environmental information which may assist GLaWAC in mapping sea country for their Indigenous Protection 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 to further discuss GLaWAC's IPA application and identify potential opportunities for Esso 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

Offshore wind feasibility licences covering areas offshore Gippsland were granted in 2Q24 and 3Q24. Esso began consultation in July 2024 to establish if these companies' functions, interests or activities have the potential to be affected by the G&G 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 the G&G activity via email and meetings. During 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 4-5.

Table 4-5 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.

Mechanism	Description
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-2.

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.

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 4-6 outlines the ongoing consultation plans for this EP.

Table 4-6 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)-(b)	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.	As required
	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 (each campaign)
	Regulatory notification of cessation of activity.	Within 10 days of activity completion (each campaign)
Newly Identified Relevant Persons	<p>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.</p> <p>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.</p>	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 G&G-specific consultations undertaken up to the date of submission of this EP is included as Appendix E-2. 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 on the 5 and 10 July 2023 with the required subject matter experts and in accordance with ExxonMobil's *Environmental Aspects Guide* (ExxonMobil, 2024). This ExxonMobil Guide is consistent with the approach outlined in *ISO 14001 Environmental Management Systems*, *ISO 31000:2018 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 aspects against 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.

Term	Definition
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 risk 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 detailed in Section 6 and 7.

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.

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 5-2 and Table 5-3. 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 interpretation outlines in Table 5-4 and Table 5-5.

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 interpretive criteria to define the overall environmental and public impact consequence level (Table 5-6).

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

Table 5-4) and three environmental sensitivity dimensions (irreplaceability, vulnerability, and influence) (Table 5-3 and Table 5-5) (ExxonMobil, 2024).

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 interpretive criteria to define the overall environmental and public impact consequence level (Table 5-6). These determinations are made during the Environmental Impact and Risk assessment workshops.

Table 5-2 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 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 5-3 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 interpretation outlines in Table 5-4 and Table 5-5.

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 interpretive criteria to define the overall environmental and public impact consequence level (Table 5-6).

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

Table 5-4 Evaluation of community 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.
	Long term (higher)	Years; effects are ongoing, persistent.

Effect dimension	Value	Description
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 5-5 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.

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
	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 confrontations without significant impairment to community safety; social support and benefits (security, education, medical care, etc.) moderately available and accessible via local offices/ institutions

Sensitivity dimension	Value	Interpretation (applies to communities or members of the community at the same scale as effect)
		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 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 5-6 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 5-7.

Table 5-7 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
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.

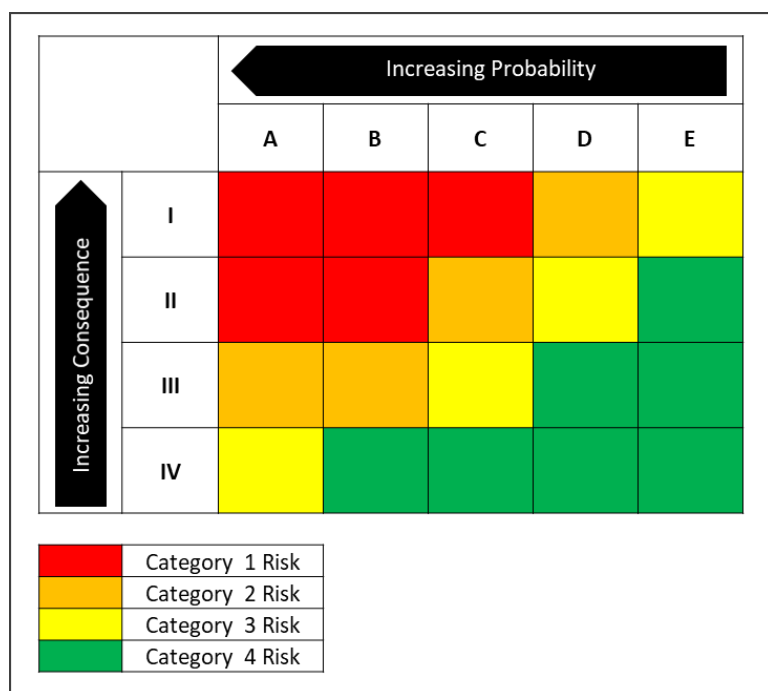


Figure 5-1 ExxonMobil risk matrix

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.




Decision Context	Factor	A	B	C
	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 ALARP 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/or aspect 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 5-8 and is based on NOPSEMA’s guidance note on *Environment Plan content requirement* (NOPSEMA, 2024). These factors are used to demonstrate acceptability in Sections 6 and Section 6.2.

Table 5-8 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.

Factor	Demonstration of acceptability	
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, environmental, social and equitable considerations.	This principle is inherently met through the EP assessment process. This principle is not considered separately for each acceptability evaluation.
	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>	

Factor	Demonstration of acceptability
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 addressed. Environmental Performance Outcomes (EPO), Environmental Performance Standards (EPS), and measurement criteria are provided for each control identified 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. Note, throughout the remainder of this chapter only residual risks are outlined.

Table 6-1 Summary Impact Assessment

Identifier	Hazard	Inherent consequence	Residual Consequence
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	III
5	Light Emissions	IV	IV
6	Planned discharge – Treated bilge and deck drainage	IV	IV
7	Emissions to air	IV	IV

6.1 Physical presence – Seabed disturbance from coring and seabed samples

6.1.1 Sources of seabed disturbance

Sediment sampling

Sediment samples will be taken from the surface layers of the seabed (Section 2.4) therefore impacts as a result of sediment sampling are limited to minor impacts to benthic organisms.

Geotechnical survey

Geotechnical surveying will be undertaken as described in Section 2.4.

Geotechnical coring will also lead to the discharge of small amounts of drill cuttings and drilling fluids to the marine environment. Drill cuttings will be comprised of benign calcareous sediments from the borehole.

Drill fluids will consist primarily of seawater and may include the low-toxicity additives.

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 seabed in the OA will be subject to localised physical disturbance during geotechnical investigations. The area of the seabed to be disturbed at each sampling site is limited to the footprint of the cores/samples taken (Table 6-2). Holes generated in the seabed as a result of geotechnical survey activities will eventually collapse and infill, and as such, impacts to the seabed will be short term and minor.

Drill cuttings generated by the coring process will result in the indirect discharge of less than 15m³ of drill cuttings at the seafloor. Cuttings are likely to range in size from very fine to very coarse particles with a mean size 10mm in diameter. Finer particles will be temporarily suspended in the water column (close to the seafloor) before settling onto the sea floor in the immediate vicinity of the sampling location. Given that seabed sediments and infauna are widespread throughout the Gippsland Basin, there will be no impacts to sensitive seabed habitats and the environmental impacts associated with the discharge of cuttings will be minor and short term.

Table 6-2 Indicative disturbance footprint for geotechnical activities per campaign

Geotechnical technique	Seabed disturbance per sample (m ²)	Maximum samples per campaign	Total seabed disturbance per campaign (m ²)	Total seabed disturbance per year (m ²)*	Total seabed disturbance over 5 years (m ²)	Total % of activity area disturbed**
CPT	9	30	270	1,620	8,100	0.00000691
CPTu	0.1	30	3	18	90	0.00000006
Piston Cores	0.3	60	18	108	540	0.00000041
Box Cores	0.4	60	24	144	720	0.00000062
Vibro Cores	18	60	1,080	6,480	32,400	0.00002488
Boreholes	3.5	30	105	630	47,358	0.00000242
Grab Samples	0.1	30	3	18	90	0.00000006
Thermal Conductivity Test	2.5	30	2.5	15	18	0.00000172
TBP	0.02	30	0.6	3.6	3,150	0.00000001

* The total seabed disturbance per year is based on the maximum number of samples being taken per campaign

** The total percentage of seabed disturbance is that of the maximum sample numbers and maximum campaigns each year.

The total area of seabed disturbance produced by geotechnical survey investigations is limited. Should the maximum number of samples be taken at different sites, with a maximum of six campaigns taken per year over the five-year period this would result in a total disturbance of 0.00109% of the activity area. This is due to different sites in the activity area being sampled. Therefore, the maximum possible disturbance footprint for the five-year period is 0.047358km² within the activity area.

The potential change in habitat and smothering may occur within the Upwelling of East Eden, which is an identified KEF for the OA. However, the overlap of the OA with the Upwelling of East Eden is 4%, which is relatively small and due to the dominance of soft sediments (sandy and muddy substrates) (Passlow, O'Hara, Daniell, Beaman, & Twyford, 2004) and Bass Strait more generally, it is expected that holes in the seabed created by geotechnical sampling will fill shortly after the sampling activity, leaving only shallow pock marks in the seabed that will be rapidly filled in (through migrating bedforms) and colonized (Sterk, Stein, & K, 2015). There are no known sensitive seabed features (e.g. islands, emergent reef systems, canyons, shipwrecks) or sensitive benthic primary producer habitats (e.g. areas of hard corals, seagrass, macroalgae or mangroves) mapped in the activity area (Butler, Althaus, Furlani, & Ridgway, 2002). Although, 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

To stabilise the boreholes, non-toxic, chemically inert WBM will be used (see Section 2.4.2). A number of reviews have been carried out to identify common drilling mud additives, application concentrations and toxicities e.g. (Hinwood, et al., 1994). Based on such reviews, WBMs are considered to be non-toxic and chemically inert and therefore do not pose a risk to the marine environment.

Drilling fluids will primarily consist of seawater and may have small quantities of the additives listed in Table 3-8. These additives are considered to be very low toxicity and are expected to dilute rapidly upon discharge, as such no toxic effects to biota are expected to occur.

6.1.4 Controls

- **CM3:** Chemical Discharge assessment process

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 6-3 Good practice controls

Decision Context A
Seabed disturbance from offshore geotechnical activities is a common occurrence both nationally and internationally.
The area of disturbance is known and identified as Consequence Level IV (the lowest level).
During consultation with relevant persons, no objections or claims regarding seabed disturbance were made.
Esso believes ALARP Decision Context A should apply.

Table 6-4 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 6-5 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Onshore disposal of cuttings	Reduce marine discharges	In order to dispose of cuttings onshore, the vessel would require significant storage capacity, which would mean contracting a vessel larger than is required. Transport of cuttings to shore for disposal would result in additional costs, safety risks and atmospheric emissions in addition to increased spill risk due a larger vessel with larger tanks. Given the small volumes of cuttings potentially discharged (15 m ³), the costs are considered grossly disproportionate.	Not adopted
Reduction in number of seabed samples taken	Reduce disturbance and impacts to the seabed	A reduction in the number of seabed samples taken would result in a significant decrease in the quality of the data obtained. Therefore, the costs to the survey are considered grossly disproportionate to the benefits.	Not adopted
Drill borehole samples to shallower depths	Reduce disturbance to seabed from borehole cuttings	A reduction in the depth of seabed samples taken would result in a significant decrease in the quality of the data obtained. Therefore, the costs to the survey are considered grossly disproportionate to the benefits.	Not adopted
Monitor the seabed environment before and after the survey to assess impacts to the seabed	Environmental monitoring would provide information on whether the activity impacted the seabed	Monitoring of the seabed would have significant additional costs to obtain and analyse data with the spatial resolution required to accurately assess any changes to the seabed habitat. The presence of additional vessels for increased periods of time would be required to undertake the pre- and post-	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	environment, however it would not change how the activity is conducted.	survey seabed environment. This would incur additional impacts and risks to the marine environment as described in other sections. Given the nature of the activity (temporary impacts over a small area) and relatively low sensitivity of the seabed environment within the area, the application of environmental monitoring controls is grossly disproportionate.	
Do not use geotechnical survey equipment close to or on the seabed	Not assessed as control is not feasible.	The deployment of equipment to the seabed is required to meet the objectives of the geotechnical survey.	Not adopted

6.1.7 Demonstration of acceptability

Table 6-6 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: 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.
Internal context	Consistent with Esso's Environment Policy.	✓	Proposed activities are consistent with Esso's Environment Policy, in particular, to "comply with all

Factor	Demonstration criteria	Criteria met	Rationale
			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. Vessels will be selected in accordance with Esso's OIMS procurement processes.
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 physical presence of the G&G survey vessels and equipment undertaking the activity may interfere with locally operating fishing and shipping activities.

The Esso license areas and activities are mostly inside, or just outside, the Bass Strait ATBA. Because of the restrictions on vessel presence in the ATBA, the presence of the G&G survey vessels is expected to have minor impacts to commercial fishing while survey activities are undertaken.

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.

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.

6.2.2 *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 500m operational area (exclusion from fishing grounds and subsequent loss of catch)
- obstacle to trawling (presence of infrastructure).

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

Displacement of third-party vessels by the survey vessels is unlikely to occur because the activities will be predominantly occurring inside of (i.e. north of) 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.

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

According to the fishery status reports 2023 (Butler, et al., 2023) the following commonwealth commercial fisheries have actively fished within the activity area (based on the 2022 fishing season):

- southern squid jig fishery – activity area overlaps maximum area fished (Figure 3-22)
- SESSF scalefish hook sector – activity area overlaps maximum area fished (Figure 3-20)
- SESSF shark hook sector – activity area overlaps maximum area fished (Figure 3-18)
- SESSF shark gillnet sector – activity area overlaps areas of low, medium, and high fishing intensity (Figure 3-19)
- SESSF otter-board trawl sector – activity area overlaps areas of low, medium, and high fishing intensity (Figure 3-17)
- SESSF Danish-seine trawl sector – activity area overlaps areas of low, medium, and high fishing intensity (Figure 3-16)

The following state fisheries overlap with the activity area:

- Abalone Fishery – 4.32% overlap with the activity area (see Figure 3-23)
- Eel Fishery – data unavailable for this fishery
- Giant Crab Fishery – 4.29% overlap with the activity area (see Figure 3-24)
- Rock Lobster Fishery – 4.29% overlap with the activity area (see Figure 3-24)
- Pipi Fishery – 5.6% overlap with the activity area (see Figure 3-25)
- Wrasse Fishery – 4.03% overlap with the activity area (see Figure 3-26)
- Sea Urchin Fishery – 5.17% overlap with the activity area (see Figure 3-27)
- Scallop Fishery – 4.03% overlap with the activity area (see Figure 3-28)

- Octopus Fishery – 4.32% overlap with the activity area (see Figure 3-29)

The activity will occur over a maximum of 180 days per year, however the overlap of the activity area with commercial fisheries is relatively small. The surveys in the activity area will not restrict commercial fishers from using the whole area during the 180 days of the year. Commercial fisheries will receive notice where surveys will be conducted. This will allow commercial fisheries to plan around the marine survey restriction zones

Based on annual fishing records and the size of the fishing grounds, the proposed activities and use of the activity area 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).

6.2.3 Controls

- **CM36:** Pre-start notifications

Refer to [Appendix H](#) for corresponding descriptions of EPOs and EPSs, and measurement criteria.

6.2.4 Residual consequence assessment

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

- **Consequence Level IV**

6.2.5 Demonstration of As Low as Reasonably Practicable

Table 6-7 Decision Context and justification

Decision Context A
<p>Offshore petroleum operations are widely undertaken both locally, nationally and internationally.</p> <p>The impacts associated with marine user interactions are well managed via legislative control measures. These controls are understood and well implemented by the industry.</p> <p>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.</p> <p>Esso has been operating in this part of Bass Strait for 60 years, with other marine users well aware of Esso's facilities and operations and no incidents relating to interactions with other marine users.</p> <p>No concerns were raised during relevant persons consultation and the socioeconomic consequence was identified as Consequence Level IV (the lowest level).</p> <p>Esso believes ALARP Decision Context A should apply.</p>

Table 6-8 Good practice controls

Good practice	Adopted	Control	Rationale
Pre-start notifications	✓	CM36: Pre-start notifications	<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 operational area will be published in Notices to Mariners, thus enabling</p>

Good practice	Adopted	Control	Rationale
			<p>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>Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.</p> <p>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.</p>

Table 6-9 Engineering risk assessment

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

6.2.6 Demonstration of acceptability

Table 6-10 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

Factor	Demonstration criteria	Criteria met	Rationale
			<p>others) to a greater extent necessary than for the exercise of the rights conferred by titles granted.</p> <p>Marine Orders are made under the:</p> <ul style="list-style-type: none"> • <i>Navigation Act 2012</i> • <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> • <i>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</i> • <i>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</i> • <i>Marine Order 18 (Measures to enhance maritime safety) 2013</i> • <i>Marine Order 27 (Safety of navigation and radio equipment) 2016</i> • <i>Marine Order 30 (Prevention of collisions) 2016</i> • <i>Rule 10 of COLREGs</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 <i>ExxonMobil Upstream Socioeconomic Management Standard</i> (ExxonMobil, 2021a) specifically in relation to managing community relations.
	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 10-1 objective to maintain public awareness and confidence in the Operations

Factor	Demonstration criteria	Criteria met	Rationale
			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 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 2kg 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 0.45m³ per person per day (NERA, 2017).

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 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 sullage 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 50m, 100m and 20m downstream of the rig and at five different water depths confirmed that the discharges were rapidly diluted in the upper 10m 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).

Given the short duration of the surveys, routine discharge of sewage and grey water to the ocean will cause a negligible and localised increase in nutrient concentrations. The total nutrient loading from vessel operations during the proposed activities will be insignificant in comparison to the natural daily nutrient flux that occurs within the region.

Therefore, potential environmental impact associated with sewage and grey water discharge is expected to be inconsequential.

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 6-11 Decision Context and justification

Decision Context A
Discharge of sewage, greywater and food waste offshore (from vessels and other facilities) is a commonly practised activity.

Decision Context A

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. A residual Consequence Level IV (the lowest level) has been identified.

No objections or claims were raised by relevant persons with regard to the discharge of sewage and food waste.

Esso believes ALARP Decision Context A should apply.

Table 6-12 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>	✓	CM9: Class Certification	<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 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 3nm from shore, and untreated sewage no less than 12nm.</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 <25mm. Macerated food waste may be discharged no</p>

Good practice	Adopted	Control	Rationale
			less than 3nm from shore and unmacerated food waste no less than 12nm (and not within the PSZ of fixed platforms).

Table 6-13 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 6-14 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> • <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

Factor	Demonstration criteria	Criteria met	Rationale
			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

This section evaluates the impacts associated with underwater sound emissions.

The key terms used in this EIA are defined in Table 6-15.

Table 6-15 Acoustic terminology used in this EIA

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)	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

Term	Definition
	<p>in underwater acoustics is 1 micropascal (μPa), whereas the reference pressure level used in air is $20 \mu\text{Pa}$, 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). 1Hz is equal to 1 cycle per second.</p>
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)	<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>
Impulsive sounds	<p>Unit: dB re $1\mu\text{Pa}$</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 $1\mu\text{Pa}$.</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 $1\mu\text{Pa}$.</p>
TTS in hearing	<p>Temporary Threshold Shift (TTS) is the temporary loss of hearing sensitivity caused by excessive noise exposure.</p>

Term	Definition
	<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>
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., 2016). 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) (Gomex, et al., 2016).</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., 2000) (Southall, et al., 2007) (Tyack P. , 2008). 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., 2007). 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 3km 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, & Foolding, 2015) (Wood, Southall, & Tollit, 2012). For this to occur the noise must be loud enough, have</p>

Term	Definition
	similar frequency content to the signal, and must happen at the same time (Wood, Southall, & Tollit, 2012).
	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) (Cholewiak, et al., 2018) (Dunlop, 2016) (Gabriele, Ponirakis, Clark, Wombe, & Vanselow, 2018) (Putland, Merchant, Farcas, & Radford, 2018). Currently, there are no specific received level thresholds for reliably assessing or regulating masking responses to underwater noise (Gomex, et al., 2016).

6.4.1 Noise Effect Criteria

The sound level threshold criteria and values for impulsive sound (the sound generated by geophysical equipment) are outlined in Table 6-16 to provide context for the EIA. The sound level threshold criteria and values for continuous sound, which is generated by vessels, is not presented as vessel sound is ubiquitous in the marine environment and not in itself considered to have significant impacts. Noise associated with dynamic positioning (DP), which will be used by geotechnical vessels to remain on station while undertaking geotechnical investigations, is discussed in Section 6.4.2.3 and Section 6.4.2.7.

Table 6-16 Impulsive sound level threshold criteria and values (per pulse) for behavioural impacts, TTS, and PTS on biological receptors

Receptor / threshold source	Behaviour	TTS	Recoverable injury	PTS / potential mortal injury / mortal injury
Fish with no swim bladder (including sharks)				
(Popper, et al., 2014)	Near (10s of metres) – high Intermediate – (100s of metres) – moderate Far (1000s of meters) – low	No criteria	213dB PK	213dB PK
Fish with swim bladder – not involved in hearing				
(Popper, et al., 2014)	Near (10s of metres) – high Intermediate – (100s of metres) – moderate Far (1000s of meters) – low	No criteria	207dB PK	207dB PK
Fish with swim bladder – involved in hearing				
(Popper, et al., 2014)	Near (10s of metres) – high Intermediate – (100s of metres) – high Far (1000s of meters) – moderate	No criteria	207dB PK	207dB PK
Fish eggs and larvae (including plankton)				

Receptor / threshold source	Behaviour	TTS	Recoverable injury	PTS / potential mortal injury / mortal injury
(Popper, et al., 2014)	Near (10s of metres) - Moderate Intermediate – (100s of metres) - low Far (1000s of meters) – low	No criteria	207dB PK	207dB PK
Low frequency cetaceans (LFC) (mysticetes, such as blue, humpback and southern right whales)				
(NMFS, 2024) (NOAA, 2019) (Southall, et al., 2007) (Southall, et al., 2019) (Malme, Miles, Clark, Tyack, & Bird, 1984)	160dB SPL	216dB PK	N/A	222dB PK
High frequency cetaceans (HFC) (such as dolphins, toothed, beaked and bottlenose dolphins)				
(NMFS, 2024) (NOAA, 2019) (Southall, et al., 2007) (Southall, et al., 2019) (Malme, Miles, Clark, Tyack, & Bird, 1984)	160dB SPL	224dB PK	N/A	230dB PK
Very high frequency cetaceans (VHFC) (e.g. sperm whales, not listed in the activity area)				
(NMFS, 2024) (NOAA, 2019) (Southall, et al., 2007) (Southall, et al., 2019) (Malme, Miles, Clark, Tyack, & Bird, 1984)	160dB SPL	196dB PK	N/A	202dB PK
Seals (otariid pinnipeds – eared seals, such as fur-seals and sea lions)				
(NMFS, 2024) (NOAA, 2019) (Southall, et al., 2007)	160dB re 1 µPa SPL	224dB re 1 µPa PK	N/A	230dB re 1 µPa PK
Turtles				
(Finneran, et al., 2017) (McCauley, et al., 2000)	166dB SPL (response) 175dB SPL (disturbance)	226dB re 1 µPa PK	N/A	232dB re 1 µPa PK

Threshold values for the 24hr SEL are not included here. They are only relevant where an animal remains stationary while the sound source moves.

The National Oceanic Atmospheric Administration (NOAA) released a technical memorandum in October 2024, that advised based on current data (via direct behavioural and electrophysiological measurements) and predictions (based on inner ear morphology, modelling, behaviour, vocalizations, or taxonomy) that not all marine mammal species have equal hearing capabilities, in relation to absolute hearing sensitivity and the frequency band of hearing (Richardson, Greene, Malme, & Thomson, 1995) (Wartzok & Ketten, 1999) (Southall, et al., 2007) (NMFS, 2024)

6.4.1.1 Marine mammal hearing groups

Marine mammals exhibit a wide range of auditory capabilities influenced by their ecological niches and underwater environment. Numerous studies have focussed on understanding the hearing ranges (kHz), peak sensitivity and auditory thresholds (measured in dB SPL) of various marine mammals. These studies categorise marine mammals into distinct hearing groups based on their auditory features, which reflect their adaptations to different environmental and functional needs (Table 6-17).

Marine mammals are generally classified into the following hearing groups based on their auditory characteristics:

LOW FREQUENCY CETACEANS (LFC)

Low frequency cetaceans (LFC), such as baleen whales, are specialised for hearing sounds in the low-frequency range, typically from 10Hz to 10kHz. These species use low-frequency sounds for long-distance communication and echolocation. The auditory thresholds for baleen whales are typically lower (more sensitive) at these frequencies compared to higher-frequency cetaceans like dolphins and toothed whales.

Baleen whales, as low-frequency cetaceans, are highly sensitive to low-frequency sounds typically ranging from 10Hz to 10kHz, with auditory thresholds generally in the range of 50 to 100dB SPL for these frequencies (Simmonds & Jefferies, 2014). Baleen whales have a peak sensitivity to sounds between 20Hz and 1kHz, which is essential for long-range communication, often over hundreds or thousands of kilometres in open ocean habitats (Au & Perrin, 2008) (Clark & Ellison, 2004).

HIGH FREQUENCY CETACEANS (HFC)

High-frequency cetaceans (HFC), such as dolphins, toothed whales (odontocetes), beaked whales, and bottlenose whales, are specialised for detecting and producing sounds at frequencies well beyond the human hearing range. These cetaceans are known for their sensitivity to high frequencies typically within the 20kHz to 150kHz range, and some species may even hear frequencies above 200kHz.

Dolphins exhibit peak sensitivity in the range of 40kHz to 100kHz, enabling them to use high-frequency sounds for precise echolocation (Tyack & Clark, 2000). Dolphins are highly sensitive to sounds in the mid-frequency range, with auditory threshold as low as 40-50dB SPL, which aids their ability to detect prey and navigate through their environment using echolocation (Au & Perrin, 2008). These thresholds indicate that high-frequency cetaceans, particularly dolphins, toothed whales, beaked whales, and bottlenose whales, are highly sensitive to sounds in the 20kHz to 150kHz range, with auditory thresholds typically between 60dB SPL to 120dB SPL.

VERY HIGH FREQUENCY CETACEANS (VHFC)

For very high-frequency cetaceans (VHFC), which include species like true porpoises, Kogia (dwarf and pygmy sperm whales), river dolphins, cephalorhynchids (e.g. *Cephalorhynchus*), and *Lagenorhynchus* species (such as *L. cruciger* and *L. australis*), their auditory thresholds and frequency ranges generally fall within the high-

frequency to very high-frequency categories, above 100kHz, often extending to 200kHz in species such as the beluga whale.

These species exhibit peak sensitivity in the very high-frequency range, with belugas, for example, demonstrating peak sensitivity at 100kHz to 120kHz (Mooney & Lammers, 2007). The auditory thresholds of VHFC are typically low in their peak frequency ranges. Sperm whales, for instance, can detect high-frequency sounds with thresholds around 40-60dB SPL, which is crucial for their use of echolocation in deep waters where prey detection at great depths is essential (Mooney & Lammers, 2007). These thresholds indicate that VHFC, such as true porpoises, Kogia, and various river dolphins, have highly sensitive hearing capabilities, particularly in the higher frequencies (above 100kHz), with thresholds ranging between 60 and 120dB SPL.

There are no VHFC identified within the activity area.

OTARIID PINNIPEDS

Otariid pinnipeds (sea lions and fur seals) are known for their specialised auditory adaptations that allow them to hear both underwater and in air. Their hearing abilities are adapted for a wide range of frequencies, generally from less than 1kHz to 60kHz, although some studies suggest they may have limited sensitivity above 30kHz (Kastak, Schusterman, & Hannan, 1999).

Otariid pinnipeds, including sea lions and fur seals, generally have an auditory range from 200Hz to 60kHz, with a peak sensitivity around 5kHz to 15kHz, which is important for vocal communication and detection of prey sounds in the environment (Kastak & Schusterman, 1998).

Their auditory thresholds typically range from 30 to 60dB SPL at their peak sensitivity frequencies, making them highly sensitive to sounds within their optimal frequency range. They are capable of hearing both underwater and in air, with their sensitivity being generally higher in air (Schusterman, Kastak, & Southall, 2000).

PHOCID PINNIPEDS

Phocid pinnipeds (true seals), like most marine mammals, have adapted to hearing underwater, where sound travels differently than in air. Phocids are generally more sensitive to low-frequency sounds, with most species able to hear frequencies ranging from 1kHz to 80kHz. Higher frequencies are less detectable, though some species can hear up to 100kHz or more (Kastelein, Helder-Hoek, & Terhune, 2018).

The peak sensitivity typically lies in the mid-frequency range, which is where phocid pinnipeds are most sensitive. Peak sensitivity for most phocids tends to be 40-50kHz (Kastelein, Helder-Hoek, & Terhune, 2018).

The auditory thresholds for phocids generally reflect their sensitivity to sound. Underwater, these thresholds range from 50-90dB SPL at their peak sensitivities. At the higher end of the hearing range, thresholds can rise significantly, often exceeding 100dB SPL (Kastelein, Helder-Hoek, & Terhune, 2018).

There are no phocid pinnipeds identified within the activity area.

Table 6-17 Marine mammal hearing groups

Hearing Group	Frequency range (kHz)	Peak sensitivity (kHz)	Auditory threshold (dB SPL)
LFC	0.007-36	0.02-1	50-100
HFC	0.15-160	40-100	60-120
VHFC	0.20-165	100-120	60-120

Hearing Group	Frequency range (kHz)	Peak sensitivity (kHz)	Auditory threshold (dB SPL)
Otariid pinnipeds	0.06-68	5-15	30-60
Phocid pinnipeds	1-80	40-50	50-90

6.4.2 Sources of sound emissions

This section describes the sources of sound emissions by the following activities:

- sound generated by the G&G vessel while using DP
- sound generated by G&G equipment, principally the geophysical equipment.

6.4.2.1 Geophysical Equipment

The frequencies and sound source levels likely to be generated by the geophysical equipment are presented in Table 6-18 (noting that exact equipment may vary slightly between campaigns and therefore typical values are shown). This sound is directed down towards the seabed rather than horizontally and is likely to be audible to most marine fauna, depending on the exact frequencies used by each type of equipment

Table 6-18 Geophysical equipment frequency ranges and source levels

Survey equipment	Frequency range (kHz)	Overlap with generalised hearing frequency range (kHz) of marine mammal groups				Power output (SPL, dB re 1 µPa @ 1m)	Overlap with auditory threshold (dB SPL)*			
		LFC 0.007 – 36	HFC 0.15–160	VHFC 0.20–165	Otariid Pinnipeds 0.06–68		LFC 50–100	HFC 60–120	VHFC 60–120	Otariid Pinnipeds 30–60
SSS	100 – 120 and up to 900	No overlap – entirely above the upper hearing limit of LFCs.	Overlap – however, the 900kHz component is beyond the upper limit if the hearing range and would be inaudible .		No overlap – entirely above the upper hearing limit of Otariid pinnipeds.	235	SSS signals are inaudible due to lack of frequency overlap.	SSS signals in the 100–120kHz frequency range would be audible at distances of up to several kilometres. The intensity of the sound at distances <5km would easily exceed the auditory threshold, making the signals detectable at high intensity.		SSS signals are inaudible due to lack of frequency overlap.
SBES	30 – 210	Partial overlap – sounds at frequencies above 36kHz fall outside the detectable range.	Overlap – sounds below 30kHz and above 160kHz would not be detectable by HFC.	Overlap – SBES operates within and beyond the upper limit of the VHFC hearing range.	Partial overlap – SBES signals >68kHz are outside the detectable frequency range.	180 – 230	As frequencies exceed 36 kHz, sounds at these frequencies will be inaudible .	SBES signals would likely be audible at closer distances (i.e. <1km) within the overlapping frequency range, however audibility would decrease with distance due to spreading and absorption.	SBES would be audible within distances up to ~1km , particularly in the overlapping frequency range. At greater distances (i.e., >5km) the sound would become inaudible due to spreading and absorption.	SBES signals between 30–68kHz would be audible within distances of up to 5km . Signals above 68kHz would be inaudible.

Survey equipment	Frequency range (kHz)	Overlap with generalised hearing frequency range (kHz) of marine mammal groups				Power output (SPL, dB re 1 μ Pa @ 1m)	Overlap with auditory threshold (dB SPL)*			
		LFC 0.007 – 36	HFC 0.15–160	VHFC 0.20–165	Otariid Pinnipeds 0.06–68		LFC 50–100	HFC 60–120	VHFC 60–120	Otariid Pinnipeds 30–60
MBES	200 – 460 and up to 700	No overlap – entirely above the upper hearing limit of LFCs.	Overlap – however, the 900kHz component is beyond the upper limit if the hearing range and would be inaudible .	No overlap – entirely above the upper hearing limit of Otariid pinnipeds.	236 – 242	MBES signals are inaudible due to lack of frequency overlap.	The intensity of the signal is extremely high, so even at distances up to 5km, the signals from 200–460 kHz will be audible to VHFCs, while the 900 kHz signal will be inaudible.		SSS signals are inaudible due to lack of frequency overlap.	
SBP	0.05 – 12	Overlap - falls within detectable range				100 – 225	SBP signals would be audible at shorter distances. The sound will attenuate over distance becoming inaudible .	The intensity of the sound is high, but because of the low frequency of the SBP signal and the auditory threshold of VHFCs, the sound will only be audible at shorter distances (e.g., 100m). At distances greater than 100 m, the sound may attenuate below the auditory threshold making it inaudible at longer ranges . Thus, the signal might be audible at short distances if the signal is above 60 dB SPL, but the signal will likely be inaudible at longer ranges.		SBP signals would be audible at shorter distances. However, at greater distances (1km and beyond), the signal will attenuate significantly, potentially falling below the auditory threshold, making it inaudible at those ranges, especially at the lower end of the frequency range.

Note: the magnetometer does not generate sound pulses, so is not included in the table.

*Sound intensity is irrelevant for frequencies outside the marine mammals hearing range. Ability to detect sounds depends on whether frequency is within hearing range.

6.4.2.2 Geotechnical Equipment

Underwater sound generated by geotechnical equipment generally attenuates rapidly and therefore has limited impacts to marine fauna. Studied sound output from a vibratory coring system (vibrocorer), a NAVCO BH-8 pneumatic vibrator attached to a sprung plate that impacts the top of the steel coring tube. There is a strong acoustic coupling between the vibrator and water because the entire apparatus is submerged during operation. The sounds produced consist of a series of impulses corresponding to the movement and impacts of the vibrator on the pipe (Reiser, Funk, Rodrigues, & Hannay, 2011). Sound generated by this vibrocorer was measured in a water depth of 46m and averaged a source level of 187.4dB re 1µPa @ 1m. A sound level threshold of 160rms SPL dB re 1µPa @ 1m was reached 69m from the vibrocorer.

6.4.2.3 Survey Vessels

The vessels will generate continuous sound from propeller cavitation, thrusters, hydrodynamic flow around the hull, and operation of machinery and equipment.

Noise from vessels acts to increase the sound in the water column above ambient noise levels. For example, noise emissions from idling vessels are low, however noise from thrusters and strong thrusts from the main engines have been recorded at levels of up to 182dB re 1µPa at 1m (McCauley, Jenner, Jenner, McCabe, & Murdoch, 1998). Under this mode of operation, McCauley (1998) measured underwater broadband noise of approximately 137dB re 1µPa at 405m. Levels of 120dB re 1µPa extended for a distance of approximately 3.5km 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, 2023) found that vessel noise levels rarely (<1% of the time) exceeded a threshold of 120dB re 1µPa (i.e. the threshold for behavioural disturbance to whales from non-impulsive sound) from an acoustic monitoring site 5.1km from the source when a drilling support vessel was holding position using dynamic positioning bow thrusters.

The MSLs and the spectra for the *Skandi Feistein* were measured during a monitoring program conducted by JASCO for Esso (Matthews, Connell, & McPherson, 2023). As the *Skandi Darwin* has greater installed power than the *Skandi Feistein* (*Feistein* has 6,160kW; *Darwin* has 7,130kW), 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 173.8dB re 1 µPa²m²s (Muellenmeister et al., 2023).

ENGINE NOISE

It is unlikely that engine sound levels will be greater than that of any other similarly-size vessel normally operating in the area (such as commercial shipping vessels).

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 sites, vessels generally emit low-level noise. The typical sound levels generated by vessels are:

- Tugboats, crew boats, supply ships and many research vessels in the 50-100m size class – 165-180dB re 1µPa range (Gotz, et al., 2009)
- Vessels up to 20m size class – 151-156dB re 1µPa (Richardson, Greene, Malme, & Thomson, 1995)
- Trawlers – peak at around 175dB re 1µPa (Gotz, et al., 2009)
- Large ships – levels exceeding 190dB re 1µPa (Gotz, et al., 2009).

DYNAMIC POSITIONING NOISE

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 dynamic positioning (DP) thrusters are used to position the vessel and when the vessel is transiting at high speeds.

Modelling undertaken by Muellenmeister (2023) within the Gippsland region analysed the underwater sound generated by an Inspection, Maintenance and Repair (IMR) vessel while utilising DP determined that the energy source level ranged between 10Hz to 25kHz and was modelled at 184.4dB re 1µPa²m²s.

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).

6.4.2.4 Impacts of sound emissions

The known and potential 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 associated with G&G investigations are:

- direct behavioural effects through disturbance or displacement, and consequent disruption of natural behaviours or processes (e.g. foraging, migration, resting, calving or spawning)
- 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
- marine invertebrates (e.g. crustaceans)
- fish
- marine mammals (whales, dolphins, seals)
- seals
- seabirds (foraging habitat), and
- target species for commercially important fisheries.

As noted by the Australian Offshore Infrastructure Regulator (OIR) and supported by international peer reviewed scientific publications (Ruppel, Weber, Staaterman, Labak, & Hart, 2022) (Reiser, Funk, Rodrigues, & Hannay, 2011) (Zykov, Bailey, Deveau, & Racca, 2013), geophysical investigations generate data using much lower intensity sources that generate much lower sound levels than marine seismic surveys (OIR, 2023). As such, the following impacts will not result from G&G:

- Physical injury to auditory tissues or other air-filled organs
- 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.

The potential impacts on individual animals from exposure to elevated sound levels above ambient sound levels in a defined area depends on a number of factors, including the extent of sound propagation underwater, its frequency characteristics and duration, its distribution relative to the location of the organisms, the sensitivity and range of spectral hearing among species (Carroll, Przeslawski, Duncan, Gunning, & Bruce, 2017).

The frequency range from the geophysical equipment overlaps with the frequency range of some marine fauna groups but is unlikely to be heard by many marine species.

The marine species that may be affected by acoustic disturbance from geophysical sound sources are generally species that hear and communicate in a similar low frequency range to the range of sounds produced (particularly baleen whale species). In addition, fish species that are deemed as truly site-attached (i.e. less able to swim away from the moving sound sources due to close associations with benthic features, such as reefs) are at increased risk from acoustic disturbance.

6.4.2.5 Geophysical Investigations

A study by Ruppel et al (2022) examined the sound levels generated by high-resolution geophysical (HRG) sources (MBES, SSS, SBP, non-airgun sources [boomers, sparkers] and acoustic doppler current profilers, ADCP) to determine how marine species may be impacted by them. Ruppel et al (2022) apply the term *de minimis* to the sound sources that are unlikely to result in incidental take (i.e. damage, harassment or injury) of marine mammals, with the sources including those proposed for this survey – MBES, SSS, SBP. The authors also state that the *de minimus* concept is accepted by the US Navy, which classifies *de minimus* sound sources as those having a low source level, narrow beams, downward directed transmission, short pulse lengths, frequencies outside known marine mammal hearing ranges, or a combination of these factors. The *de minimus* concept is based on the application of the sound pressure level (SPL) threshold for marine mammals of 160dB re 1µPa (as outlined in Table 6-16).

The study by Ruppel et al (2022) presents behavioural evidence suggesting that MBES and SBES are unlikely to cause incidental harm or take of marine mammals. Their review highlights that these sonar systems produce sound levels that are typically lower than thresholds known to cause adverse effects on marine mammals. The study also emphasizes that marine mammals generally do not exhibit significant behavioural responses to these types of sonar emissions. This suggests that, under most operational conditions, MBES and SBES are not likely to lead to injury, disturbance, or other forms of incidental take of marine mammals.

MBES, SSS and SBP are also classified as *de minimus* (Ruppel, Weber, Staaterman, Labak, & Hart, 2022). The simultaneous use of HRG equipment, which is routine practice for geophysical surveys (it saves time, resources and reduces impacts by minimising vessel time), was determined by Ruppel et al (2022) to be unlikely to lead to incidental take (i.e. damage or impacts) to marine mammals, and is in fact the least impactful approach to surveying with HRG sources. As such, Ruppel et al (2022) suggest that HRG surveys using one or more sources at a time should be treated wholly as *de minimus* actions.

The simultaneous use of geophysical survey equipment, which is routine practice for geophysical surveys, was determined by Ruppel et al (2022) to be unlikely to lead to incidental take (i.e. damage or impacts) to marine mammals, and is in fact the least impactful approach to surveying with geophysical survey sources. As such, Ruppel et al (2022) suggest that geophysical survey techniques using one or more sources at a time should be treated wholly as *de minimus* actions.

Marine species generally avoid or move away from sound sources (vessels or HRG sources) (Ruppel, Weber, Staaterman, Labak, & Hart, 2022), further reducing the likelihood of impacts to marine species, particularly whales.

In shallow water environments, high frequency signals from HRG sources propagate further than in deep water (Zhang & Meng, 2020), due to the reflections from the sea surface and seafloor. When sound travels at angles to the horizontal that are smaller than the critical angle, typically around 15°, the sound is almost perfectly reflected. As such, the use of measured ranges to threshold from high frequency sources in shallow water to estimate ranges in deeper water is a conservative approach. This means where information from the same water depth is not available, shallower water information has been applied. Using in-beam levels instead of out-of beam levels provides conservative estimates of threshold distances.

Measurements conducted as part of monitoring programs in the Arctic (Chukchi and Beaufort Seas), detailed in Reiser *et al* (2011) and Warner and McCrodan (2011) present measured results (as opposed to modelling) for HRG equipment. These data illustrate that the sound levels generated by HRG equipment rapidly attenuates within hundreds of metres of the sound source. The studies outlined were conducted in water depths ranging from 17m to 48m, which is similar to the water depths in the shallower western and northwest parts of the activity area. (Reiser, Funk, Rodrigues, & Hannay, 2011) (Warner & McCrodan, 2011) Table 6-20 summarises these results using SPL metrics, while Figure 6-1 to Figure 6-6 present the same results using PK, SPL and SEL metrics.

The equipment selected will be the minimum required to undertake the activity in order to ensure underwater noise is limited to as low as practicable.

Based on these studies, the EMBA for underwater sound generated by geophysical investigations is unlikely to be beyond tens to hundreds of metres from the sound source for behavioural effects. TTS and PTS are not anticipated to be reached (see Section 6.4.3).

6.4.2.6 Geotechnical Investigations

Reiser *et al* (2011) studied the sound output from a vibratory coring system (vibracore), a NAVCO BH-8 pneumatic vibrator attached to a sprung plate that impacts the top of the steel coring tube. There is a strong acoustic coupling between the vibrator and water because the entire apparatus is submerged during operation. The sounds produced consist of a series of impulses corresponding to the movement and impacts of the vibrator on the pipe (Reiser, Funk, Rodrigues, & Hannay, 2011). Sound generated by this vibracore was measured in a water depth of 46m and averaged a source level of 187.4dB re 1µPa @ 1m. A sound level threshold of 170rms SPL dB re 1µPa @ 1m was reached 15m from the vibracore. At a threshold of 160rms SPL dB re 1µPa @ 1m, the distance extended to 69m and at a threshold of 130rms SPL dB re 1µPa @ 1m, the distance extended to 7,100m.

Erbe and McPherson (2017) measured radiated noise levels from marine geotechnical drilling and standard penetration testing (SPT) from a jack-up rig situated in 7-13m of water at the Port of Geraldton and at James Price Point, WA in 2010. The broadband (30Hz - 2kHz) drilling source levels ranged from 142 to 145dB re 1µPa @ 1m and the broadband (20Hz - 24kHz) SPT source levels ranged from 151 to 160dB re 1µPa2s @ 1m at both locations (equivalent to approximately 160 - 170dB re 1µPa SPL at 1m), with received levels reducing to approximately 141 to 146dB re 1µPa SPL within 20m distance from the source (Erbe & McPherson, 2017). These source levels are lower than those typically generated by vessels under DP, and tens of decibels used in marine noise regulations (Erbe & McPherson, 2017). Based on these results, it is not credible that sound generated from geotechnical equipment would add to sound levels emanating from louder sources of sound, most notably the geotechnical vessel while on DP.

Given that the impulsive sound threshold for behavioural effects to cetaceans is 160dB, based on the Reiser *et al* (2011) study, the EMBA is 69m for behavioural effects. TTS and PTS are not anticipated to be reached unless in extremely close proximity to the sound source (i.e. several metres).

6.4.2.7 Vessel DP Sound

Sound modelling was undertaken by JASCO in 2023 (Muellenmeister, 2023) within the Gippsland region, which modelled the concurrent sound of an Inspection, Maintenance and Repair (IMR) vessel using DP, the sound of a remotely operated vehicle (ROV) performing underwater cutting, and the sound of a Dive Support Vessel (DSV) using DP at three locations.

The locations closest to the activity area were the Patricia-Baleen wells (located approximately 5km north of the activity area), which resulted in the following predicted distances to effect based on sound exposure levels over 24 hours (the results are based on the scenario containing the IMR under DP and the ROV cutter) (Muellenmeister, 2023).

Using the largest distances to effect in Table 6-19, the EMBA for underwater sound generated from vessel DP are:

- PTS = 0.07km
- TTS = 2.22km
- Behavioural = 7.82km.

Because the Muellenmeister (2023) modelling was based on concurrent activities (i.e. several sound sources) and based on sound exposure level over 24 hours, compared to the operation of one geotechnical vessel operating at one time in one location as will be the case with these activities (noting that platform activities in the vicinity do not generate any significant underwater sound), the EMBA listed above are in fact likely to be conservative and will be lower for this activity.

Table 6-19 Summary of distances to effects from the vessel DP study by Muellenmeister (2023)

Fauna group	PTS	TTS	Behavioural
LFC (includes PBW, SRW and humpback whales)	0.06km	2.22km	7.82km
HFC (some odontocetes, such as toothed whales and dolphins)	Not reached	0.05km	
VHFC (odontocetes such as porpoises)	0.07km	0.95km	
Otariid pinnipeds (fur seals)	Not reached	0.02km	
Turtles	Not reached	0.05km	Not reported

Table 6-20 Summary of geophysical sounds from the Chukchi and Beaufort Sea investigations

Distance to sound level threshold (rms SPL rms 90dB re 1 μPa @ 1 m)	SBP tow-fish			MBES sonar, vessel - mounted	SSS
	Chukchi Sea	Beaufort Sea			Chukchi Sea
	90th percentile fit	90th percentile fit, Camden Bay	90th percentile fit, Harrison Bay	Chukchi Sea	@ 120kHz in-beam (90th percentile fit)
Water depth (m)	48m	34m	17m	37m	37m

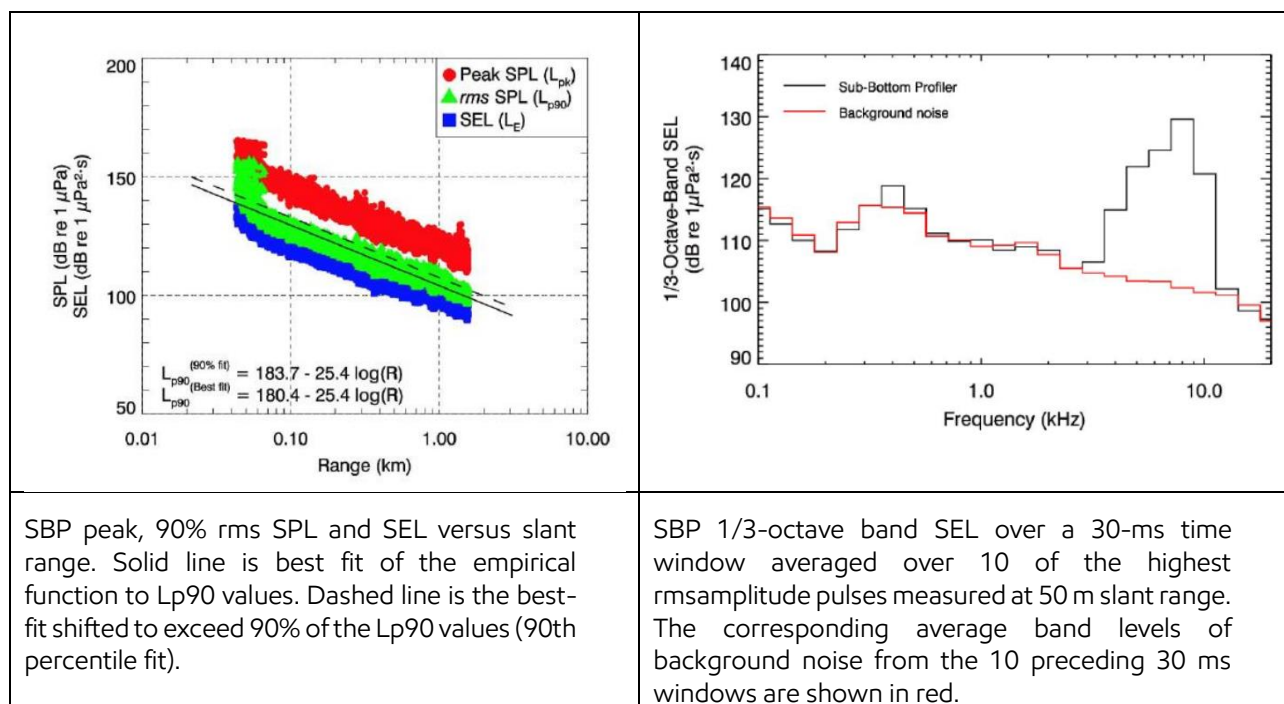
Distance to sound level threshold (rms SPL rms 90dB re 1 μPa @ 1 m)	SBP tow-fish			MBES sonar, vessel - mounted	SSS
	Chukchi Sea	Beaufort Sea		Chukchi Sea	Chukchi Sea
	90th percentile fit	90th percentile fit, Camden Bay	90th percentile fit, Harrison Bay		@ 120kHz in-beam (90th percentile fit)
190	-	-	-	-	22
180	-	-	-	-	47
170	-	-	-	-	100
160	9	1	9	-	230
150	21	5	30	27	490**
140	52	22	97	62	-
130	130	85	310	140 †	-
120	320	300	1,000	330 †	-
110	790	870	3,300	-	-
100	1,900	1,900	11,000	-	-
SL (dB re 1 μPA @ 1m)	183.7	162.1	178.8	189.0	229.3

* Used as the more conservative (i.e. higher) figure than aft endfire.

† Extrapolated beyond maximum measured range of 100 m.

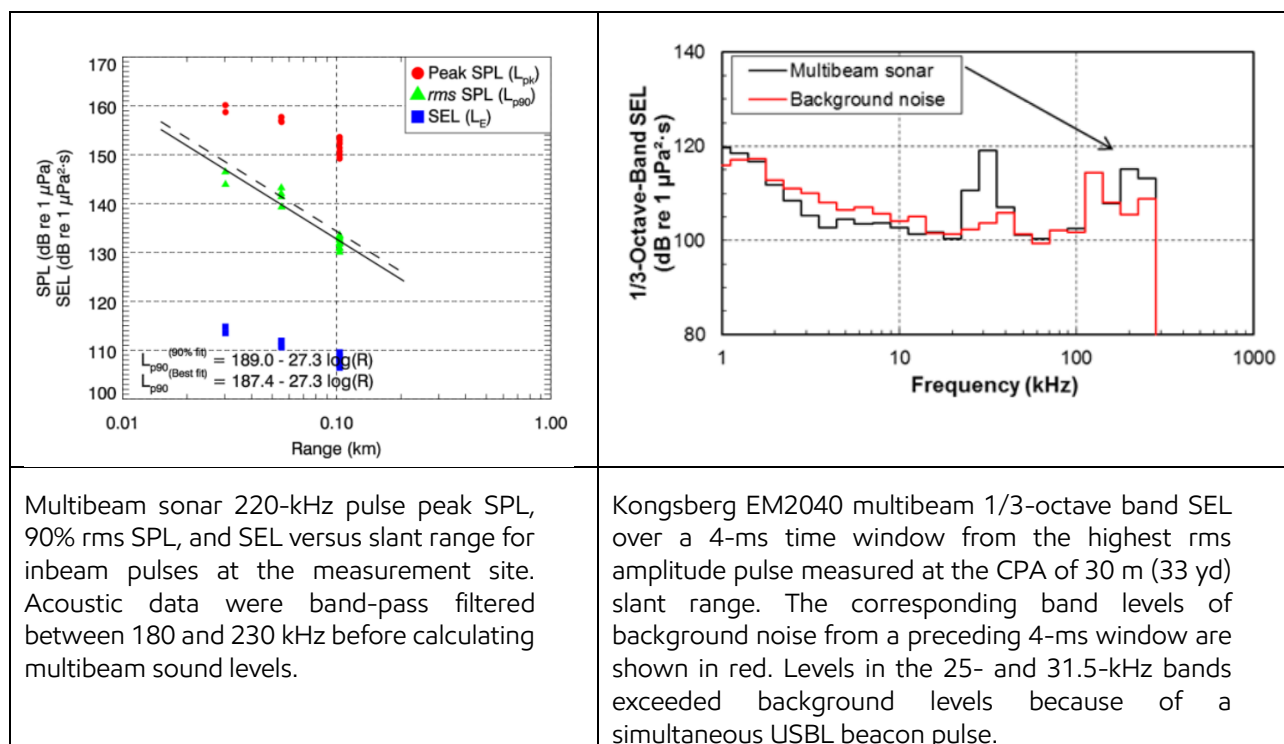
**Extrapolated beyond maximum measured range of 400 m.

Source: Reiser et al (2011) and Warner and McCrodon (2011).



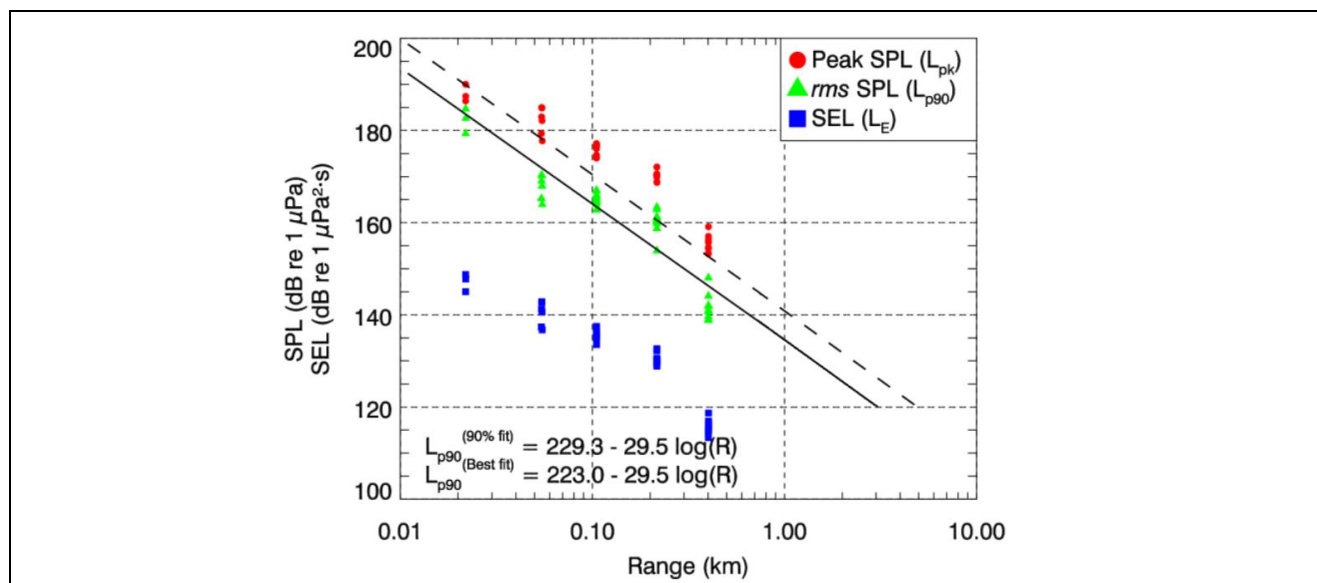
Source: Reiser et al (2011).

Figure 6-1 SBP measurements from the Chukchi Sea measured at 48m receiver depth



Source: Warner and McCrodan (2011).

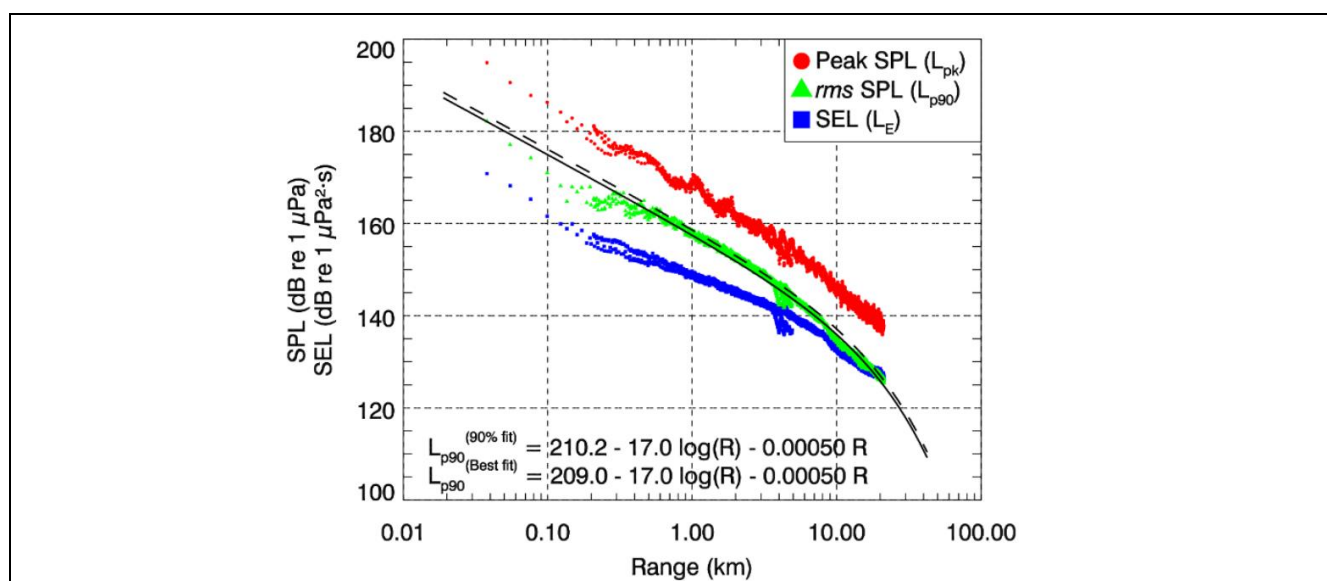
Figure 6-2 MBES measurements from the Chukchi Sea measured at 37m receiver depth and 30m range (Kongsberg EM2040 multibeam)



SSS 120-kHz pulse in-beam peak SPL, 90% rms SPL, and SEL versus range. Solid line is best fit of the empirical function to L_{p90} values. Dashed line is the best-fit shifted to exceed 90% of the L_{p90} values (90th percentile fit).

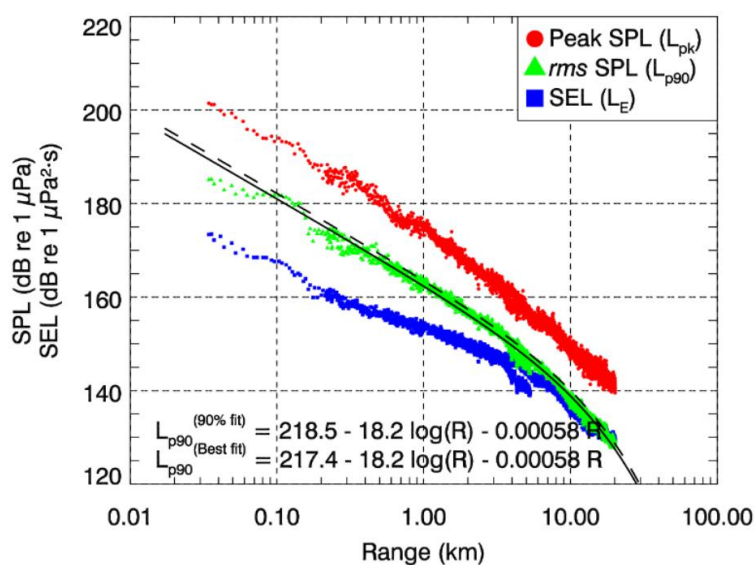
Source: Warner and McCrodan (2011).

Figure 6-3 SSS measurements from the Chukchi Sea measured at 7m receiver depth and 42m range (GeoAcoustics 159D side-scan, acoustic data were band-pass filtered between 100 and 125kHz before calculating sound levels)



Single 10 cui airgun peak, 90% rms SPL and SEL versus range in the forward (left) and aft (right) endfire directions. Solid line is best fit of the empirical function to L_{p90} values. Dashed line is the best-fit shifted to exceed 90% of the L_{p90} values (90th percentile fit). Source: Warner and McCrodan (2011).

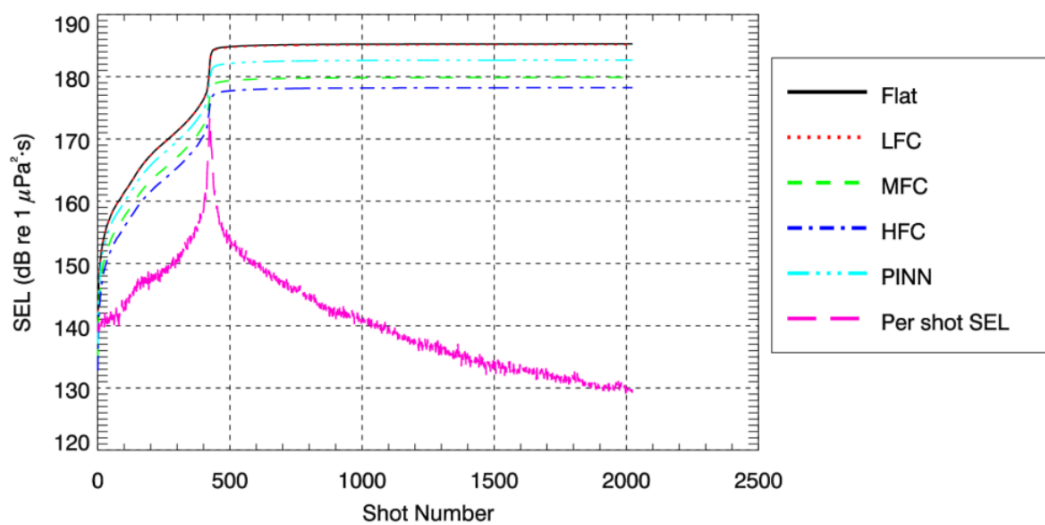
Figure 6-4 Shallow seismic sound levels versus range measurements from the Chukchi Sea for the single 10 cui airgun measured in 37 m water depth.



Airgun array 40 cui airgun peak, 90% rms SPL and SEL versus range in the forward (left) and aft (right) end fire directions. Solid line is best fit of the empirical function to Lp90 values. Dashed line is the best-fit shifted to exceed 90% of the Lp90 values (90th percentile fit).

Source: Warner and McCrodan (2011).

Figure 6-5 Shallow seismic sound levels versus range measurements in the Chukchi Sea for the 40 cui airgun array measured in 37 m water depth



Source: Warner and McCrodan (2011).

Figure 6-6 A 40 cui airgun array: cumulative SEL, Flat- and M-weighted cumulative sound exposure level with flat-weighted per pulse SEL for a recorder with a CPA distance of 34m. The 40cui airgun array was fired every 12.5m

6.4.3 Impact Assessment

This section evaluates the impacts associated with underwater sound against the receptors outlined in Section 6.4.2.4.

6.4.3.1 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. This means that only a small percentage of a cohort will be exposed to geophysical, geotechnical or DP sound at any one time. Invertebrate plankton species that have gas-filled flotation organs (such as cephalopods) are more likely to be affected by underwater noise.

The following summarises research findings into the impacts of sound from seismic surveys on plankton (noting the relative paucity of research on non-seismic HRG sound sources other than that presented earlier by Reiser *et al* (2011) and absence of research on the effects to plankton from continuous sound sources such as vessel DP):

- Exposure to seismic sound reveals no differences in larval mortality or abundance for fish, crabs, or scallops (Carroll, Przeslawski, Duncan, Gunning, & Bruce, 2017).
- Zooplankton exposure to airguns (150cui and operating pressure of 2,000psi) increased the mortality rate from a natural level of 19% per day to 45% per day, with this mortality rate observed out to 1.2km (McCauley, et al., 2017).
- Zooplankton populations recovered quickly after seismic exposure due to their fast growth rates and due to the dispersal and mixing of zooplankton from both inside and outside of the impacted region. The modelling undertaken found that while there was a maximum decline of 22% in zooplankton populations in the survey and a 14% decline within 15km of the survey area, it took only 3 days following the completion of the survey for zooplankton biomass to recover to pre-seismic survey levels within the survey area and within an area of 15km around the survey area. The study notes that because zooplankton growth rates are slower in colder regions (e.g. Bass Strait), the recovery rate of zooplankton populations following exposure to MSS is likely to be slower (Richardson, Matear, & Lenton, 2017).
- Other studies found that sound-induced mortality in larval fish had occurred in the range of 0.5 to 3m around the source, and damage may occur out to approximately 5m (Payne, Adreus, Fancy, White, & Christian, 2008) (Kostyuchenko, 1973) (Matishov, 1992). Another found mortalities of up to 100%, but only at close range (0.1m), and at distances of 2.7m from the seismic source, mortalities did not differ from those of controls (Cox, Dux, Quist, & Guy, 2012) as cited in NSW DPI, 2014.

The data presented in Figure 6-1 to Figure 6-6 indicates that the sound levels from geophysical activities will not reach the thresholds outlined in Table 6-16 and therefore impacts from the activity are likely to be insignificant to plankton. Impacts to plankton are likely to be insignificant at both a local and population level or compared with natural variability and mortality rates for plankton organisms (as supported by the studies listed in this section).

The effects to plankton from the continuous sound source of vessel DP is expected to be similarly insignificant.

6.4.3.2 Marine Invertebrates (crustaceans)

Invertebrates are less sensitive to noise impacts than fish species and marine mammals due to their lack of air-filled internal organs. Experiments on lobsters indicates that the statocyst (a mechano-sensory organ responsible for detecting gravity, body positioning and movement) is sensitive to sound and particle motion. The statocyst controls the righting response in lobsters that plays a vital role in the ability to escape predators (Day, McCauley, Fitzgibbon, Hartmann, & Semmens, 2019).

Controlled tank-based experiments and showed that noise from lower level sources, such as ships, altered behaviour in the shallow water European shore crab (*Cancer maenus*) by disrupting feeding, slowing reaction time to threats, and hastening turn-over times for crabs placed on their backs (Wale, Simpson, & D Radford, 2013).

Impacts to crustaceans from impulsive sound are likely to be insignificant because lethal effects to crustaceans have not been observed in studies (Christian, Mathieu, Thomson, White, & Buchanan, 2003) (Parry & Gason, 2006) (Payne, Adrews, Fancy, White, & Christian, 2008) (Day, McCauley, Fitzgibbon, & Semmens, 2016a) and underwater sound is not expected to reach the threshold listed in Table 6-16. The effects to marine invertebrates from the continuous sound source of vessel DP is expected to be similarly insignificant.

6.4.3.3 Fish

Several species of EPBC Act-listed fish occur with the activity area (see Appendix B).

There is a small overlap between the activity area and the one fish BIA:

- Great white shark –15.6% overlap with the breeding (nursery area) BIA.

The effects of underwater sound on fish are expected to be limited to behavioural responses within several hundred metres of the sound source. This is because of the transient and mobile nature of the surveys, the operating frequencies and noise maxima of the HRG sources, the wide availability of suitable fish habitat through the activity area and results of research into the effects of underwater sound on fish.

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). Direct physical damage may occur to fish if they approach within a few metres (<5m) of a seismic source (Gausland, 2020) (Parvin, Nedwell, & Harland, 2007), noting that seismic sound sources have higher sound levels than HRG equipment.

Lethal effects of seismic surveys on fish have not been reported, but those with a swim bladder closely connected to the inner ear are more susceptible than those without (McCauley R. , 1994). It follows then that impacts to fish from *de minimus* HRG sources will not have any impacts. Fish with thin-walled, lightly damped and large swim bladders will be most susceptible to mechanical damage or trauma from sound pulses. Elasmobranchs (sharks and rays), family Scombridae (tuna) and many of the flatfish and flounder species do not possess a swim bladder and so are not susceptible to swim bladder-induced trauma (McCauley R. , 1994) (this accounts for four of the six fish species listed in the activity area). The likelihood of fish being close enough to the sound sources for physiological impacts to occur is considered remote.

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) (McCauley & Kent, 2012) (Popper, et al., 2015) (Popper, et al., 2007).

Underwater sound modelling undertaken for a geophysical survey in central Bass Strait (Beach Energy, 2021) in water depths of 65-80m with seabed sediments similar to that of the activity area (fine, medium and coarse sands) and 390km southwest of the activity area predicted that the maximum distance to TTS and PTS for fish were either not reached or extended to no greater than 1.6m from the sound sources (SBP, boomer, pinger, sparker, SBES and MBES). Similar results are expected for this activity.

Behavioural impacts to fish from HRG equipment noise 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. Most or all of the HRG equipment operates at frequencies higher than those detected by most fish, which reduces the risk of impacts (Ladich & Fay, 2013).

The data presented in Figure 6-1 to Figure 6-6 also indicates that the sound levels from geophysical activities will not reach the thresholds outlined in Table 6-16 and therefore impacts from geophysical investigations are likely to be insignificant to fish.

The modelling undertaken by Muellenmeister (2023) (for concurrent sound from vessels using DP) noted that that TTS in fish with a swim bladder was reached within 30m of all modelled locations, only if a fish remains static for 12 hours. 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.

6.4.3.4 Turtles

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

Given the transient and mobile nature of the survey, the operating frequencies and noise maxima of the survey equipment, the low abundance of turtles in Bass Strait, the absence of turtle BIAs, nesting beaches or habitat critical to turtle species in Bass Strait and the results of research into the effects of underwater sound on turtles (described herein), the predicted impacts of underwater sound on turtles are expected to be limited to behavioural responses within a few metres of the sound source.

Morphology

Morphological studies of green and loggerhead turtles (Ridgeway, Wever, McCormick, Palin, & Anderson, 1969) (Wever, 1978) 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 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 50–2,000Hz, with highest sensitivity to sounds between 200 and 400Hz (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 500Hz (Willis, 2016). Recent work on green turtles has

refined their maximum underwater sensitivity to be between 200 and 400Hz (Piniak W. , Mann, Harms, Jones, & Eckert, 2016).

Most studies looking at the effect of underwater sound (primarily from seismic surveys) on marine turtles have focused on behavioural responses given that physiological impacts are more difficult to observe in living animals. Sea turtles have been shown to avoid low-frequency sounds (Lenhardt, 1994) and sounds from an airgun (O'Hara & Wilcox, 1990), but these reports did not note received sound levels.

Observations from onboard a seismic survey vessel during a 10-month 3D marine seismic survey off West Africa found that turtles occurred closer to the sound source when air guns were off, with double the sighting rate during the period when the air guns were off in all distance bands within 1,000m of the airgun array (Weir, 2007). The reduction in the number of turtles observed is reasonably consistent with the observations of McCauley *et al* (2003), which indicated an avoidance response threshold of approximately 175dB re 1 μ Pa SPL.

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. However, there are very few data on temporary hearing loss and no data on permanent hearing loss in sea turtles exposed to airgun pulses. The greatest impact is likely to occur if sound pulses are generated in or near areas where turtles concentrate, and at seasons when turtles are concentrated there. This will not be the case with the proposed G&G investigations as there are no turtle nesting areas in the EMBA.

Underwater sound modelling undertaken for a geophysical survey (SBP, boomer, pinger, sparker, SBES and MBES) in southwest Victoria (Beach Energy, 2021) predicted that the maximum distance to the behavioural threshold for turtles was 36m or less, and the maximum distance to the potential mortal injury threshold was 1.6m from the sound sources. The modelling undertaken by Muellenmeister (2023) noted that that TTS for turtles will be reached within 50m of the sound source and PTS was not reached. The data presented in Figure 6-1 to Figure 6-6 also indicates that the sound levels from geophysical activities will not reach the thresholds outlined in Table 6-16 and therefore impacts from the activity are likely to be insignificant to turtles.

These results, combined with the rare occurrence of turtles and the absence of turtle BIAs, nesting beaches or habitat critical to turtle species in Bass Strait in the activity area, mean that physiological and behavioural impacts to turtles from underwater sound associated with the activity are unlikely.

6.4.3.5 Commercial fishers

The following fisheries are active within the activity area (i.e. had various levels of fishing intensity with the activity area during the 2022 season):

- Southern squid jig fishery (Figure 3-22)
- SESSF scalefish hook sector (Figure 3-20)
- SESSF shark hook sector (Figure 3-18)
- SESSF shark gillnet sector (Figure 3-19)
- SESSF otter-board trawl sector (Figure 3-17)
- SESSF Danish-seine trawl sector (Figure 3-16).

The potential impacts of underwater sound on commercial and recreational fisheries are:

- Physiological or behavioural changes in target species that results in a lower catch intensity in the short- or long-term, with a consequent potential decrease in associated catch and income.

Potential underwater noise impacts relevant to commercial fisheries stocks are assessed earlier (Impacts to Plankton and Impacts to Fish and Impacts to Invertebrates). Insignificant consequences are expected and the risks from the activity are limited to possible localised displacement of fisheries species (and prey) in the immediate vicinity of the G&G investigations.

6.4.3.6 Avifauna

There are 28 seabird species (mostly albatross and petrels), and six shorebird species listed as known or likely to occur within or overfly the activity area. These species, especially albatross and petrels, all have considerable foraging habitat present throughout Bass Strait, the Southern Ocean and other seas around Australia.

In the event that individual birds or flocks are foraging in the activity area during G&G operations, vessel movement may potentially deter them (temporarily) from foraging in the immediate vicinity of the vessel. The likelihood of underwater sound significantly impacting a population of any given species or even individuals (during plunge/dive feeding) is extremely low.

An indirect impact may occur if sound pulses cause changes to the abundance or behaviour of prey species (fish). Behavioural impacts to fish species are considered to be localised and temporary, with behavioural impacts to fish from HRG equipment noise limited to behavioural responses within metres of the noise source. Fish may be temporarily displaced from the immediate vicinity of the sound source. Most or all of the HRG equipment operates at frequencies higher than those heard by most fish, which reduces the risk of impacts (Ladich & Fay, 2013).

However, the extent to which temporary 'descending' or 'tightening' responses of schooling prey fish such as pilchards (if it occurs) affects availability to avifaunal predators either positively or negatively, is not known. As described earlier in 'fish', the effects to fish from the activity will be very localised and temporary, so it is not likely that significant impacts to predatory avifauna will be experienced.

The small size of the individual investigations relative to the normal foraging grounds of the bird species is not significant. Any temporary dispersal of prey species (i.e. fish) due to underwater sound would therefore not result in any significant decrease in availability of prey species that is of biological significance for these populations.

Shorebird species are not expected to be affected by the G&G activities, given their preference for species of prey occurring in areas of intertidal sandflats and mudflats along the coastline, which are not part of the activity area and are distant from the effects of sound for fish.

Given the infrequent, transient and mobile nature of the activity, the operating frequencies and noise maxima of the survey equipment, and the extensive area available regionally for foraging, the predicted impacts of underwater sound on avifauna are expected to be negligible.

6.4.3.7 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 (>20,000Hz), with no responsive hearing below 500Hz (0.5kHz). 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 10-15Hz (APPEA, 2004). The optimal hearing frequency range for baleen whales is between ~20 and 1,000Hz (McCauley R. , 1994).

Sound is very important to whales and dolphins for effective hunting, navigation and communication. For example, Mysticetes communicate at low frequencies (20Hz to approximately 5kHz) using predominantly tonal type calls. Odontocetes communicate using both tonal signals (up to approximately 30kHz) and

echolocation clicks (peak frequencies range from approximately 40 – 130kHz), which they also use for hunting and navigation (Au, Popper, & Ray, 2000).

The type and scale of the effect on cetaceans to underwater sound generated by geophysical equipment and DP will depend on several factors including the level of exposure, the physical environment, the location of the animal in relation to the sound source, how long the animal is exposed to the sound, the exposure history, how often the sound repeats (repetition period) and the ambient sound level. The context of the exposure plays a critical and complex role in the way an animal might respond (Gomex, et al., 2016) (Southall, Nowacek, Miller, & Tyack, 2016).

The EPBC Act PMST for the activity area ([Appendix C](#)) lists five species of threatened cetaceans are likely to, or are known to occur within the activity area:

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

The effects of underwater sound on marine mammals are expected to be limited to behavioural responses within several hundred metres of the sound source during geophysical investigations. This is because of the transient and mobile nature of the survey, the operating frequencies and noise maxima of the survey equipment (including the *de minimus* classification of HRG sources), the results of research into the effects of underwater sound on marine mammals presented in this section, and the implementation of control measures outlined in [Appendix H](#).

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 G&G activities, 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), there is no data for Mysticetes. There is no conclusive evidence of a link between sounds of seismic surveys and mortality of cetaceans (Gotz, et al., 2009), and it could therefore be inferred that there are likely to be no TTS or PTS impacts resulting from lower sound sources, such as HRG equipment.

Modelling of geophysical equipment like that proposed for the investigations has been undertaken at a number of locations around the world, including Russia, Greenland, California and Victoria (Zykov, Bailey, Deveau, & Racca, 2013) (Austin, Warner, & McCrodan, 2012) (McPherson & Wood, 2017) (Zykov, Matthews, & Chorney, 2012). These studies indicate that both peak and frequency-weighted Sound Exposure Level (SEL) noise emissions from survey equipment such as MBES or SBP (chirpers) are typically below sound levels that could result in TTS or PTS in LFC and HFC from either peak (PK) or SEL criteria. The source levels for the MBES and SBP geophysical equipment for this activity are likely to be on par with those noted in the studies described above. As the MBES will not cause the thresholds for physiological impact to be exceeded in these studies,

this is expected to also be the case with the investigations. Reiser et al (2011) notes that no injury or death of marine mammals was attributable to the geophysical survey (which used the same equipment as that proposed for this activity). As such, the threatened and migratory cetaceans that are known or likely to occur within the activity area (see [Appendix B](#)) are not likely to experience physiological effects if they are moving through the activity area at the time of the activity.

The modelling undertaken by Muellenmeister (2023) (for concurrent sound from vessels using DP) predicts that that TTS for LFC will be reached within 2.22km of the sound source and PTS will be reached within 60m of the sound source.

Underwater sound modelling undertaken for a geophysical survey in central Bass Strait (Beach Energy, 2021) in water depths of 65-80m with seabed sediments similar to that of the activity area (fine, medium and coarse sands) and 390km southwest of the activity area predicted the following maximum distances to effects:

- TTS – for LFC and HFC, the distance ranged from not being reached to no greater than 10m from the sound sources
- PTS – for LFC and HFC, the distance ranged from not being reached to no greater than 2.8m from the sound sources.

Given the similarity of water depths and seabed sediments between the activity area and the area that was subject to the modelling, similar distances to TTS and PTS effects are expected for this activity. At these distances to effects, there will be no physiological impacts to SRW if they are migrating through the reproduction BIA to the immediate north of the activity area (at its closest point, the reproduction BIA is about 3km from the closest point of the activity area, being VIC/RL1, see Figure 3-7).

Similarly, impacts to PBW that are migrating through or foraging in the activity area at the time of the activity will not be injured by underwater sound from DP sound given that their behaviour is likely to involve avoiding the sound source (see next section), meaning they are unlikely to be within the distances to effect for TTS or PTS. 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.

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) (Hotchkiss & Parks, 2013) (Blackwell, et al., 2015). Masking can also occur (Erbe, Reichmuth, Cunningham, Lucke, & Dooling, 2015).

A study of behavioural impacts to humpback whales from underwater sound from a seismic survey experiment in southeast Queensland and Dongara in Western Australia (noting the seismic surveys have higher sound levels than HRG sound sources) found that the majority of pods appeared to avoid the survey vessel at distances greater than the radius of most injury-based mitigation zones (Cato, et al., 2013).

Small odontocetes (HFC) responded to airgun sounds by moving laterally away from the sound, showing the strongest lateral spatial avoidance, compared to Mysticetes and killer whales that showed more localised spatial avoidance.

HRG equipment could cause masking of vocalisations of cetaceans due to the overlap in frequency range between signals from some equipment (e.g. SBP) and cetacean vocalisations. However, due to the limited propagation range of the relevant frequencies, the range at which the impact could occur will be small, generally within hundreds of meters.

- Modelling of geophysical equipment like that proposed for the investigations has been undertaken at a number of locations around the world, including Russia, Greenland, California and Victoria (Zykov, Bailey, Deveau, & Racca, 2013) (Austin, Warner, & McCrodon, 2012) (McPherson & Wood, 2017) (Zykov, Matthews, & Chorney, 2012). These studies indicate that the threshold for behavioural disturbance could be exceeded within 120m of the sound source.
- Measurements of vessel-mounted SBP operating at 3.5kHz indicated that the threshold for behavioural disturbance for marine mammals could be exceeded within 22 to 30m (Reiser, Funk, Rodrigues, & Hannay, 2011).

Masking is only likely to apply to HFC (toothed whales and dolphins) for the MBES and SSS, with all signals above 2kHz. The SBP could potentially mask vocalisations from LFC (i.e. all whale species listed for the activity area), as they have a primary frequency range from 10 to 1,000Hz, however the low sound source levels mean the ranges will be small (as noted above, ranging from 22–120m). Similar distances to effects (i.e. 22–120m) would therefore be expected for the proposed activity. At the distances to effects noted in the studies quoted earlier, there are unlikely to be behavioural impacts to the listed marine mammals that would cause significant effects (i.e. alterations to migratory, foraging or breeding behaviours). The results of the studies quoted earlier suggest that if SRW are migrating through the reproduction BIA in the nearshore Victorian coastal waters at the time of the geophysical investigations closest to Victorian waters, which is about 3km from Vic/RL1, the threshold for behavioural disturbance is unlikely to be reached, and therefore behavioural impacts are unlikely.

Similarly, impacts to PBW that are migrating through or foraging in the activity area at the time of the activity will not be injured by underwater sound from geophysical activities or DP sound given that their behaviour is likely to involve avoiding the sound source. 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.

SEALS

Both the Australian and New Zealand fur seals may occur within the activity area. Seals (and sea lions) produce sounds over a generally lower and more restricted bandwidth (generally from 100Hz to several tens of kHz) than cetaceans. Their sounds are used primarily in critical social and reproductive interactions (Southall, et al., 2007). Most species of seal (and sea lions) have peak sensitivities between 1 and 20kHz (NRC, 2003).

Seals may tolerate sound pulses of high intensity and may be able to approach operating equipment to a close range because their hearing is poor in low frequencies (McCauley R. , 1994). However, it is also suggested that seismic surveys may affect pinniped prey abundance or behaviour, particularly if the seismic survey runs for long periods.

Fur seals are less sensitive to low frequency sounds (1kHz). McCauley (1994) suggests that the sound frequency of seismic air gun pulses is below the greatest hearing sensitivity of Otariid pinnipeds, but data is lacking for Australian species. Aerial sounds produced by the Australian fur-seal (*Arctocephalus pusillus*) have strong tonal components at frequencies that are less than 1kHz, although they all range up to 6kHz with most energy between 2-4kHz. If the low frequency components of calls are used, then seals may also hear at low frequency and may be affected by seismic source pulses. However, Shaughnessy (1999) states that seismic activity will only be a threat to pinnipeds if it takes place close to critical habitats.

Gotz et al (2009) reports that controlled exposure experiments with small airguns (215 – 224dB re 1µPa) were carried out over 1 hour to individual harbour seals (*Phoca vitulina*) and grey seals (*Halichoerus grypus*), and in seven out of eight trials with harbour seals, the animals exhibited strong avoidance reactions. Two harbour seals equipped with heart rate tags showed immediate, but short-term, startle responses to the initial airgun pulses. The behaviour of all harbour seals seemed to return to normal soon after the end of each trial, even in areas where disturbance occurred on several consecutive days. Only one harbour seal showed no detectable response to the airguns and approached the airgun to within 300m, and seals remaining in the water returned to pre-trial behaviours within two hours of the end of the experiment (Gotz, et al., 2009). General avoidance behaviour of other northern hemisphere seal species was exhibited at exposure levels above 170dB re 1µPa.

The data presented in Figure 6-1 to Figure 6-6 indicates that the sound levels from geophysical activities mostly remain under the thresholds outlined in Table 6-16 and therefore impacts from the activity are likely to be insignificant to pinnipeds. Fish, being the key prey of pinnipeds, are not likely to be impacted in the long-term by the activity (see 'Impacts to fish'). As such, there are not likely to be significant consequences to the foraging habits of fur-seals. These results, combined with the fact that the activity area is located a significant distance from known breeding areas of the Australian fur-seal and New Zealand fur-seal (such as Rag Island located 64km southwest of the activity area, and The Skerries located 87km northeast of the activity area), and that HRG sound sources are classed as *de minimus* for marine mammals, means the activity will have negligible impacts on seals.

HIGH FREQUENCY CETACEANS

The PMST report for the activity area identified a number of migratory species ([Appendix B](#)) with several dolphin species, beaked and toothed whales. However, no behaviours or BIAs were identified within the activity area 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 detected within the activity area.

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 activity area and the EMBA overlap the foraging (annual high use area)

BIA for PBWs and the migration BIA for SRWs. There is a small overlap between the activity area and the following whale BIA's:

- PBW – 0.24% overlap with the foraging BIA (Figure 3-5)
- SRW – 0.18% overlap with the migration BIA (Figure 3-6)

PYGMY BLUE WHALES (SUBSPECIES OF BLUE WHALES)

As blue whales are listed as endangered under the EPBC Act and have known biologically important behaviours within the activity area, 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 III 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.

Adopting the controls in Section 6.4.4 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 6.4.4 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) as outlined in the assessment Table 6-21.

Table 6-21 Assessment of G&G surveys against the Conservation Management Plan for the Blue Whale

Description	Justification
A1 - Maintain, implement, and improve efficacy of current legislative and management protection	
1. Continue or improve existing legislative management actions	<p>The EP will implement the following commonwealth legislation and management arrangements (as outlined in the the <i>Conservation Management Plan for the Blue Whale</i>):</p> <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) • Australian National Guidelines for Whale and Dolphin Watching 2017 (CM8 Vessel Master) • EPBC Act Policy Statement 2.1
A2 – Assessing and addressing anthropogenic noise	
2. Assessing the effect of anthropogenic noise on blue whale behaviour	The use of JASCO reports and summarised underwater sound reports assist with the commitments that Esso has in relation to this EP.
3. Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area	<p>The controls in place (CM8 Vessel Master, CMP26 Fauna Observations and CMP33 Adaptive Management) will ensure that activities are modified if any Blue Whales are in the 7.82km observation zone. See Section 6.4.4 for full assessment and details of controls in place.</p> <p>It is considered with these controls in place that the activities will not prevent any PBW from utilising the area or cause auditory impairment while surveys are conducted in the foraging BIA.</p> <p>The current uncertainty regarding the effects of anthropogenic noise on PBW these behaviours and life history traits. Even though there is a very low probability of PBW being present, Esso will apply the precautionary approach and apply the following additional controls:</p> <ul style="list-style-type: none"> • Trained crew to undertake continuous observation • Two designated watchkeepers on the marine survey vessel • One watchkeeper is focused on the operational task at hand, the other is responsible for maintaining the safe

Description	Justification
	<p>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 mammal observations.</p> <ul style="list-style-type: none"> • Pre-activity observations for PBW will occur for 30 minutes prior to starting the survey. <ul style="list-style-type: none"> ◦ If PBW is seen, the survey will be delayed until the whale has left the observation zone or after 30 minutes from last observation (if PBW dives down) • Adaptive management will be undertaken if a PBW is observed.
<p>4. EPBC Act Policy Statement 2.1—Interaction between offshore seismic exploration and whales is applied to all seismic surveys</p>	<p>The control measures align with EPBC Act Policy Statement 2.1 by:</p> <p>A2: Trained crew (CMP26)</p> <ul style="list-style-type: none"> • Signed induction records • Verification of competency certificates <p>A3.1: Pre-start-up visual observations (CMP33)</p> <ul style="list-style-type: none"> • 30 minutes prior start of works <p>A3.3 Start-up delay procedure (CMP33)</p> <ul style="list-style-type: none"> • Delay works if PBW is seen during the 30 minutes prior works to commence • Continue to delay once PBW has left observation zone or last seen minimum 30 minutes within the observation zone <p>A3.4: Operations procedure (CMP26)</p> <ul style="list-style-type: none"> • Watchkeepers are consistently on the lookout for PBW and other marine megafauna while operations are in progress <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 PWW) responses from behavioural, masking, TTS and PTS <ul style="list-style-type: none"> ◦ The observation zone is continuously monitored.

Description	Justification
5. Ensuring behavioural impacts are considered when developing and updating policy documents on the management of cetaceans and anthropogenic noise	<p>The PBW foraging BIA overlaps 0.24% of the OA (Figure 3-5). The incorporation of the BIA into this EP demonstrates that Esso have considered the impacts of G&G on PBW foraging.</p> <p>Esso has committed to control measures that will ensure that PBW have reduced impacts from G&G.</p>

The area affected represents a small portion of the PBW known foraging BIA (0.24%). 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. 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.

SOUTHERN RIGHT WHALES

The activity area and EMBA both overlap with the SRW migration BIA (Figure 3-6). The activity area is located 3km from the SRW reproduction BIA boundary (Figure 3-7).

The SRW may avoid the activity area whilst marine survey investigations are conducted 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 – 3,800km 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.

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 6-22. 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.

It is unlikely that calving whales would remain in the activity area with water depths greater than 100m, as the whales prefer to occupy depths of less than 10m. Although 160dB SPL is the recommended threshold for behavioural impacts (NMFS, 2024; NOAA, 2019), there is uncertainty whether SRW have a lower sound threshold for other life stages such as reproduction cycle or juveniles. 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 OA (0.18%) 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). Based on this assessment and controls in place the consequence level from sound impacts is assessed as III for SRW.

Table 6-22 Analysis of G&G against the National Recovery Plan for the Southern Right Whale (*Eubalaena australis*)

Description	Justification
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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> .	<p>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>):</p> <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) • Australian National Guidelines for Whale and Dolphin Watching 2017 (CM8 Vessel Master) • EPBC Act Policy Statement 2.1 (see A 5.4 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 from utilising the area or cause auditory impairment.	<p>The activity area overlaps with the SRW migration BIA (0.18%). The SRW reproduction BIA is located 3km northwest from the activity area (Figure 3-7).</p> <p>The controls in place (CM8 Vessel Master, CMP26 Fauna Observations, and CMP33 Adaptive Management) will ensure that there are no activities undertaken if any SRW's are in the observation zone.</p> <p>It is considered with these controls in place that the activities will not prevent any SRW from utilising the area or cause auditory impairment in the migration and reproduction BIA.</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. Even though there is a very low probability of SRW being present, Esso will apply the precautionary approach and apply the controls outlined in section 6.4.4</p> <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 (0.18% overlap).</p>
3. Actions within and adjacent to southern right whale BIAs and HCTS should demonstrate that the risk of behavioural disturbance is minimised.	<p>The activity area overlaps with the SRW migration BIA. The SRW reproduction BIA is located 3km northwest of the activity area.</p> <p>The controls in place CM8 Vessel Master, CMP26 Fauna Observations, and CMP33 Adaptive Management will ensure that the risk of behavioural disturbance is minimised.</p> <p>Geophysical Investigations</p>

	<p>Based on the behavioural EMBA being tens to hundreds of meters for Geophysical activities, and given the activities are located 3km from the boundary of the HCTS there is a very low probability of SRW being impacted. However, Esso will still apply the precautionary approach and apply the controls as above.</p> <p>The geophysical activities are not likely to impact the SRW utilising the reproduction BIA as there is no overlap and there is a 3km buffer between the OA and the reproduction BIA. This buffer distance is well beyond the threshold for behavioural disturbance caused by geophysical equipment. Studies have shown that SRWs exhibit low sensitivity to noise sources at such distances, therefore reducing the likelihood of behavioural or physiological impacts.</p> <p>These results suggest that if SRW are migrating through the reproduction BIA in the nearshore Victorian coastal waters at the time of the geophysical investigations, the threshold for behavioural disturbance is unlikely to be reached, and therefore behavioural impacts are unlikely.</p> <p>Geotechnical Investigations</p> <p>Based on the behavioural EMBA of 7.82km for geotechnical activities, an adjusted activity area will be applied during the SRW reproduction season (between May to October) (see Figure 6-7).</p> <p>The adjusted activity area for geotechnical activities during the reproduction season ensures that these operations do not coincide with the SRWs' most sensitive life stage. By avoiding activities adjacent to the BIA during this period, the risk of interference with breeding, calving, and nursing behaviours is minimised.</p> <p>Underwater sound also diminishes with distance, especially in shallow coastal waters where SRWs typically breed. Given the established buffer and adjusted activity area, it is unlikely that sound levels reaching the BIA would exceed thresholds known to elicit significant behavioural or stress responses in SRWs.</p> <p>The absence of direct spatial overlap, the implementation of robust buffer and adjusted activity area (Figure 6-7), and adherence to mitigation measures ensure that the proposed geotechnical investigations will not impact SRWs utilising the reproduction BIA.</p>
4. Ensure environmental assessments associated with underwater noise generating activities include	The control measures align with EPBC Act Policy Statement 2.1 by:

<p>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>A2: Trained crew (CMP26)</p> <ul style="list-style-type: none"> Signed induction records Verification of competency certificates <p>A3.1: Pre-start-up visual observations (CMP33)</p> <ul style="list-style-type: none"> 30 minutes prior start of works <p>A3.3 Start-up delay procedure (CMP33)</p> <ul style="list-style-type: none"> Delay works if SRW is seen during the 30 minutes prior works to commence Continue to delay once SRW has left observation zone or last seen minimum 30 minutes within the observation zone <p>A3.4: Operations procedure (CMP26)</p> <ul style="list-style-type: none"> Watchkeepers are consistently on the lookout for SRW and other marine megafauna while operations are in progress <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 8-7) <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 <ul style="list-style-type: none"> The observation zone is continuously monitored to help ensure that juvenile SRW are not impacted by impulsive sound <p>B.6: Adaptive management (CMP33).</p>
<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, 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 300m of a whale or 150m of a dolphin • ensure the vessel is not knowingly getting closer than 100m of a whale or 50m of a dolphin • ensure the vessel avoids rapid changes in engine speed or direction if a cetacean approaches the vessel within the above zones.
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.	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.
5. Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.	Watchkeepers and MFO responsibility to report SRW vessel strike incidents to these authorities, additional to DCCEEW.

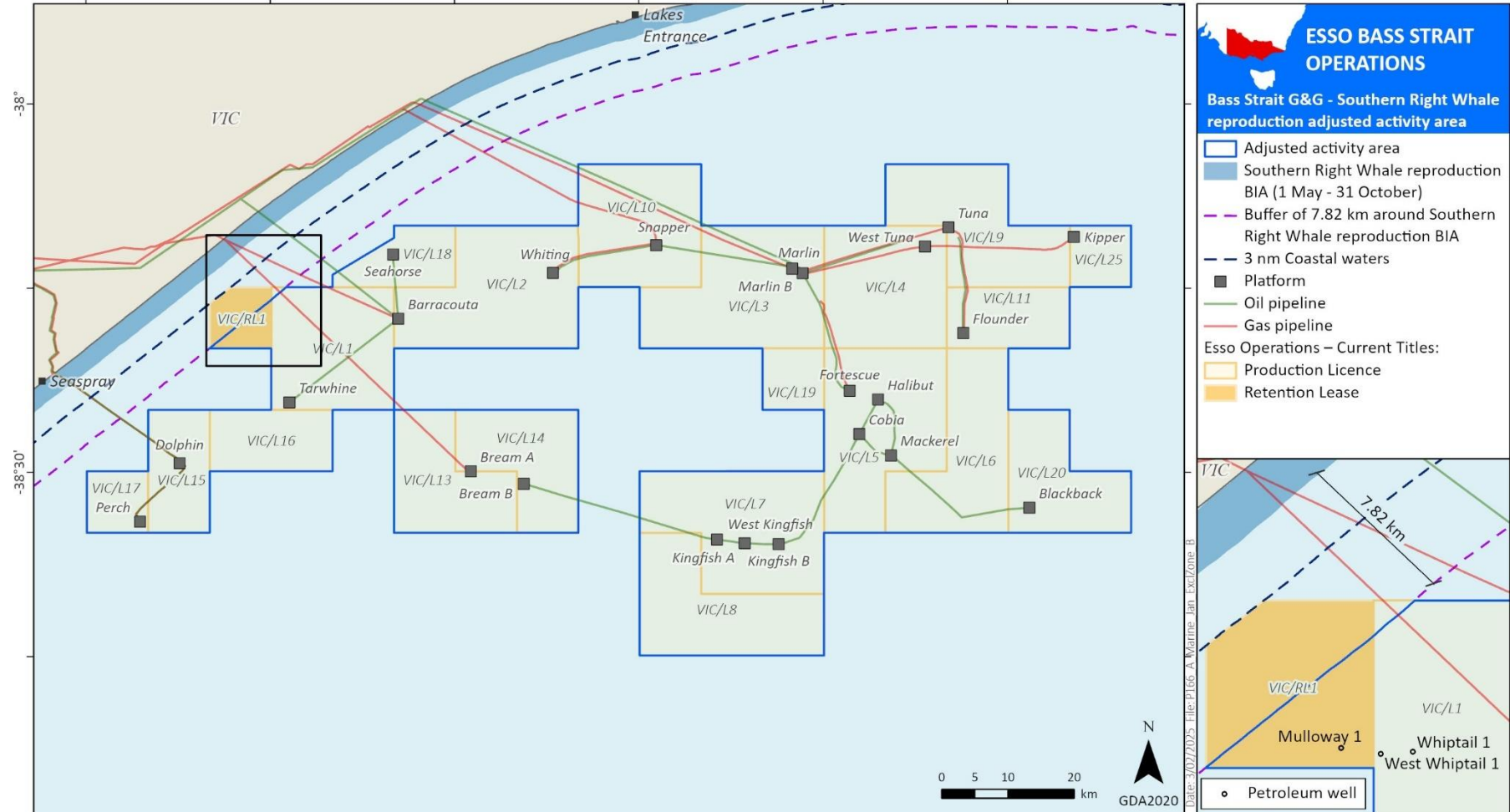


Figure 6-7 Geotechnical investigation adjusted activity area to be applied during SRW reproduction season (May to October)

6.4.4 Controls

- **CM8:** Vessel Master
- **CMP26:** Fauna observations
- **CMP33:** Adaptive whale management procedure PBW and SRW
- **CM18:** PMS DP thrusters to be well maintained to operate efficiently

Refer to [Appendix H](#) for corresponding descriptions of EPOs and EPSs, and measurement criteria.

Note: During the application of adaptive management, as shown in Figure 6-9, there may be times when the vessel may be undertaking operations during which it is 'unsafe' to move the vessel or cease DP operations. Examples of these operations during geotechnical surveys include the following:

- having seabed tethered equipment deployed
- lifting operations in progress
- any time the Vessel Master deems that there is a greater risk to health and safety by moving the vessel or ceasing DP operations.

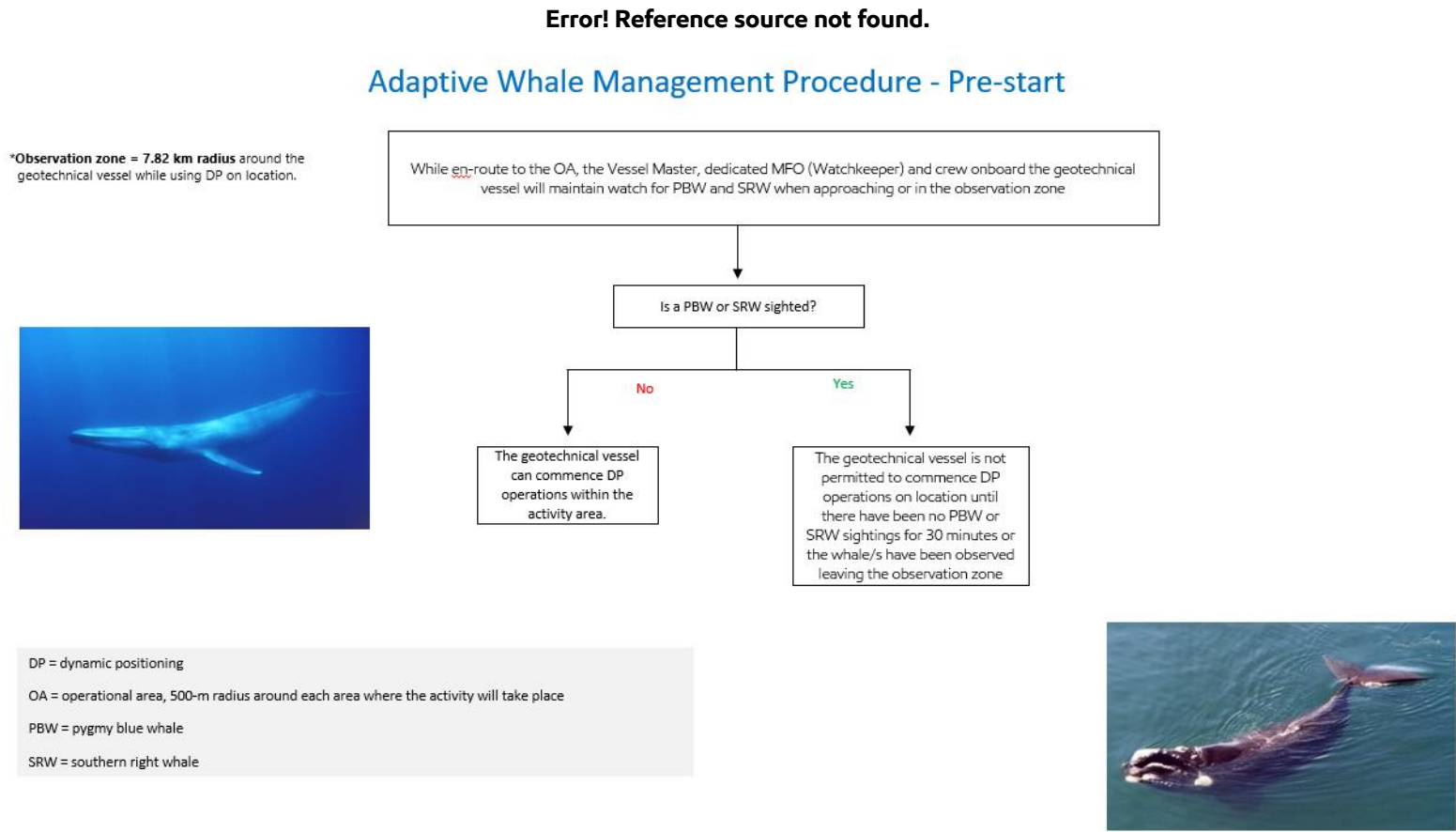


Figure 6-8 Adaptive Whale Management Procedure for pre-start observations prior to geotechnical survey commencement

Adaptive Whale Management Procedure – Geotechnical Operations

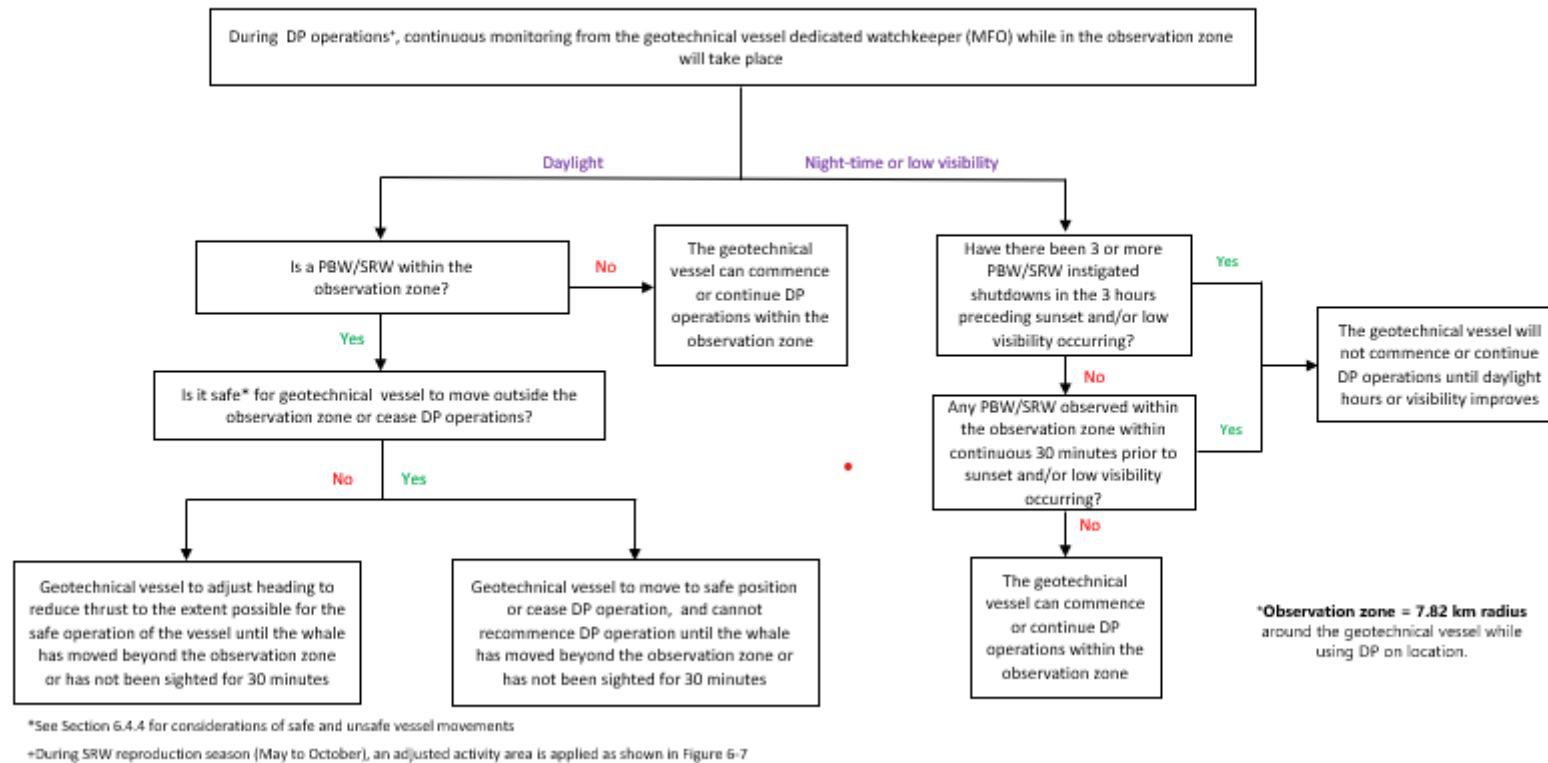


Figure 6-9 Adaptive whale management procedure during geotechnical operations

6.4.5 Residual consequence assessment

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

- **Consequence Level III**

6.4.6 Demonstration of As Low as Reasonably Practicable

Table 6-23 Decision Context and justification

Decision Context A
<p>Impacts from underwater sound emissions are relatively well understood for cetaceans and most groups of fish, but there is uncertainty in relation to the level of impacts. The activity is located in a BIA for foraging pygmy blue whales, adjacent to a reproduction BIA for SRW, 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 6-24 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).</p> <p>Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017).</p>	✓	CM8: Vessel Master	<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; 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 6-25 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Do not undertake the activity.	Eliminates underwater sound generation.	Without the use of vessels, undertaking the activity is not possible. As such, this is not a feasible option.	Not adopted
Trained crew undertake continuous observations for G&G surveys	Allows for fauna observations.	<p>A.2: Trained crew regarding <i>EPBC Act Policy Statement 2.1 – Interaction between offshore seismic exploration and whales</i></p> <p>Vessel crew are all 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> <p>Vessel crew are also provided an EP-specific environment induction which further reinforces these requirements in whale observation, species identification and reporting requirements.</p> <ul style="list-style-type: none"> • Trained bridge crew undertake continuous observations • Vessels are required to have two watchkeepers on the marine survey vessel at all times. • 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 compliance with the EPBC Act and other relevant conservation 	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>management plans. As such, vessel crews complete Marine Fauna Observation 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. 	
Trained crew undertake continuous observations for geotechnical operations	Allows for fauna observations and adaptive management to be undertaken as per CMP33 – Adaptive whale management procedure PBW and SRW (Geotechnical investigations only).	Geotechnical vessel crew are provided an EP-specific environment induction which further reinforces the adaptive management plan requirements for geotechnical operations [See CMP33 – Adaptive whale management procedure PBW and SRW (Geotechnical investigations only)].	Adopted
Only conduct the activity outside of indicative peak PBW season (April to June)	Very little benefit, given that PBW could be present at any time of the year.	<p>Not feasible.</p> <p>They are known to frequent the Bonney Upwelling to the west of Bass Strait in November and December and may be present in the Bass Strait between April and June. Esso's preference would be to undertake the activity whenever vessels are available, but also in the summer periods when Bass Strait has more favourable environmental conditions. Furthermore, during the summer period there is less likelihood of operational downtime due to cetacean presence and weather conditions. However, activity timing is subject to vessel availability and operational requirements.</p> <p>The impact (in the event of whales being present) will be managed through controls and adaptive management.</p> <p>This control measure is not feasible and the costs of implementing it are grossly disproportionate to the environmental benefits.</p>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Only conduct the activity outside of the SRW migration season (~April to October)	No benefit.	<p>According to revised BIA data for the SRW, the Activity area is not within the migration BIA, which occurs between April to October. The activity may occur any time within the year, therefore restricting operations to a certain 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 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>	Not adopted
Only conduct the activity outside of the SRW reproduction season (~May to October)	No disturbance to SRW during the reproduction season.	<p>Geophysical Activities</p> <p>Given that the impulsive sound threshold for behavioural effects to cetaceans is 160dB, based on the Reiser et al (2011) study, the EMBA is 69m for behavioural effects. The SRW reproduction BIA is located 3km northwest of the activity area at its closest point and therefore is outside the 69m behavioural effects EMBA. Therefore no seasonal restrictions will be applied to the Geophysical activities.</p> <p>Geotechnical Activities</p> <p>A 7.82km sound EMB buffer has been applied for Geotechnical activities from the SRW reproduction BIA to ensure no behavioural disturbance during reproduction season. This has resulted in an adjusted operational area reducing the area in VIC/RL1 and VIC/L1 that Geotechnical activities can be undertaken during May to October (See Figure 6-7)</p>	Partially adopted (Geotechnical activities only)
Shut down all DP thrusters on the geotechnical vessel if whales (particularly PBW and SRW) are sighted near the vessel.	Reduces the potential for PTS, TTS and behavioural impacts.	Coming off DP would result in the geotechnical vessel drifting off location and if this happened with equipment deployed, it would damage the equipment and/or vessel and there are likely to be associated safety risks to personnel and equipment retrieval and/or repair costs.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		This control measure is not technically feasible and would lead to unacceptable integrity and safety risks.	
Limit power to the geotechnical vessel while on DP.	Reduces the potential for PTS, TTS and behavioural impacts for cetaceans.	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. The geotechnical vessel must be able to hold station to safely undertake the geotechnical investigations. 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.	Not adopted
EPBC Policy Statement 2.1 – Part A (Sections A.3.1 – Pre start-up visual observations, A.3.3 – Start-up delay procedure, A.3.4 – Operations procedure, A.3.5 – Stop work procedure, A.3.6 – Night-time and low visibility procedure and A.4 – Compliance and sighting reports) (Standard management procedures) for the geophysical investigations	Improves the ability to spot and identify marine fauna at risk of impact from underwater sound (CMP26 – Fauna observations).	Part A (Sections A.3.1, A.3.3, A.3.4, A.3.5, A.3.6 and A.4) of the policy statement have become accepted practice for most offshore survey activities, regardless of the intensity of sound generated, project location or time of year. The policy statement notes that these procedures should be sufficient in areas where there is a low likelihood of encountering whales. There is little additional cost of implementing these procedures.	Adopted
EPBC Policy Statement 2.1 – Part A.3.2 (Standard management procedures) – soft-start for the geophysical investigations	Reduces the potential for PTS, TTS and behavioural impacts for cetaceans.	The equipment to be used for these geophysical investigations is different to conventional (and higher impact) seismic surveys. This equipment can only be turned on or off; there is no ability to gradually ‘ramp up’ the sound. Therefore, implementing soft-starts for the geophysical investigations is not an option for this activity.	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Use of competent (trained and experienced) MMOs during the G&G activity.	Reduces the potential for PTS, TTS and behavioural impacts for cetaceans.	<p>Two MMOs onboard the geotechnical (and/or geophysical) 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>Cost: Having two competent MMOs onboard is required to ensure each shift can be reliably completed. 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, up to \$2,000 each day for both MMOs.</p> <p>Limitations: Sourcing trained and experienced MMOs to be available for each individual investigation for this activity can be logistically complex. Given the short distances to effect for LFC and the very small areas of overlap with PBW BIAs, the cost and logistical considerations associated with having MMOs onboard the vessel is not supported. Given the dedicated MFOs.</p>	Not adopted
Undertake pre-activity aerial survey within the behavioural zone (7.82km for geotechnical operations for PBW and SRW)	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 geotechnical vessel DP activities.	<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>	Not adopted
Undertake pre-activity vessel-based observations within the behavioural zone (7.82km for geotechnical)	Increases the confidence that there are no foraging PBW in the behavioural zone that could be displaced upon	<p>Cost: No additional costs. Bridge crew and personnel are trained in the process for visual observations of whales and will report any sighting while on route to each OA.</p> <p>Limitations: Vessel-based surveys do not guarantee that whales will be sighted, and the</p>	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
operations) for PBW and SRW while on route to each OA at the start of the activity.	the start of DP activities (CMP26 – Fauna observations).	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).	
Undertake vessel-based observations for PBW and SRW while on route to the activity area	Increases the confidence that there are no foraging PBW or migrating SRW in the behavioural zone that could be displaced upon the start of G&G activities (CMP26 – Fauna observations).	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 Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations), which is implemented via the Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017). Vessel have on board trained and dedicated watchkeepers (MFO).	Adopted
Undertake aerial surveillance for cetaceans with drones	Monitoring and detection.	<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>Additionally, Esso adopted the use of sophisticated 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> <p>physical range of drones is only approximately 4-5km</p> <p>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</p>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		<p>technical support and operators required.</p> <p>Any sightings are far easier spotted 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> <p>The additional cost, safety issues and operational limitations outweigh the negligible environmental benefit.</p>	
Undertake pre-activity and activity vessel-based observations for white shark (<i>Carcharodon carcharias</i>) and grey nurse shark	Understanding white shark abundance and distribution.	<p>White sharks and grey nurse 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) and <i>Recovery for the Grey Nurse Shark (Carcharias taurus)</i> (DoE, 2014) does not list underwater sound as a threat.</p> <p>The overlap with the breeding BIA for white sharks is low (15.64%). The likelihood of occurrence in this area of overlap is low, as the activity area does not overlap with inshore reefs, where they known to reproduce. Pre-activity surveys would not be required to observe white sharks and grey nurse sharks due to the low likelihood of occurrence in the activity area.</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>	Not adopted
Undertake pre-activity and activity vessel-based observations for turtles (particularly leatherback turtles)	Understanding turtle abundance and distribution	<p>There are no nesting beaches within the EMBA 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>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Undertake pre-activity and activity vessel-based observations for pinnipeds	Understanding pinniped abundance and distribution	<p>Both the Australian and New Zealand fur seals may occur within the activity area. The activity area is located a significant distance from known breeding areas of the Australian fur-seal and New Zealand fur-seal (such as Rag Island located 64km southwest of the activity area, and The Skerries located 87km northeast of the activity area).</p> <p>The data presented in Figure 6-1 to Figure 6-6 indicates that the sound levels from geophysical activities mostly remain under the thresholds outlined in Table 6-16 and therefore impacts from the activity are likely to be insignificant to pinnipeds.</p> <p>Fish, being the key prey of pinnipeds, are not likely to be impacted in the long-term by the activity (see 'Impacts to fish'). As such, there are not likely to be significant consequences to the foraging habits of fur-seals. These results, combined with the fact that the activity area is located a significant distance from known breeding areas of the Australian fur-seal and New Zealand fur-seal and that HRG sound sources are classed as <i>de minimus</i> for marine mammals, means the activity will have negligible impacts on seals.</p>	Not adopted
Undertake pre-activity and activity vessel-based observations for dolphins	Understanding dolphin abundance and distribution	<p>The PMST report for the activity area identified several dolphin species, beaked and toothed whales. However, no behaviours or BIAs were identified within the EMBA or Bass Strait.</p> <p>Underwater sound modelling undertaken for a geophysical survey in central Bass Strait (Beach Energy, 2021) predicted the following maximum distances to effects:</p> <ul style="list-style-type: none"> • TTS – for LFC and HFC, the distance to effect is no greater than 10m from the sound sources • PTS – for LFC and HFC, the distance to effect is no greater than 2.8m from the sound sources. <p>At these distances, it is highly unlikely there will be physiological impacts to dolphins within the activity area.</p>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		The Australian National Guidelines for Whale and Dolphin Watching 2017 (Commonwealth of Australia, 2017) will be implemented and given the highly mobile nature of dolphins, impacts of the activity are predicted to be temporary avoidance of the immediate area during operations.	
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, the following factors limit its effectiveness:</p> <p>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 PBW and SRW</p> <p>bearing accuracy and range estimation is limited because it is not as accurate as visual observations.</p> <p>The use of an experienced MMO negates 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>	Not adopted

6.4.7 Demonstration of acceptability

Table 6-26 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

Factor	Demonstration criteria	Criteria met	Rationale
			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>National Recovery Plan for the Southern Right Whale</i> (DCCEW, 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) • <i>Recovery Plan for the Grey Nurse Shark (Carcharias taurus)</i> (DoE, 2014)
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".

Factor	Demonstration criteria	Criteria met	Rationale
	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.
	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

Vessels are equipped with navigational and safety lights. It is expected that operations will be conducted 24-hours a day when the campaigns are operational.

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 5km (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 breeding 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.

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 15km away (DCCEEW, 2023).

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 (DCCEEW, 2023). 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 (DCCEEW, 2023).

The OAs are more than 20km 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 (2022)* (CoA, 2022). 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 100km 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 vessels will not affect population levels. The impacts of light from the activity

was assessed against the light mitigation toolbox in the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023) (Table 6-27).

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.

Table 6-27 Assessment of the light management options for seabirds from the National Light Pollution Guidelines for Wildlife (DCCEEW, 2023)

Management Option	Achievable?	Justification
Implement management actions during the breeding season.	Yes	Achievable management actions are identified in this table and in Appendix H (adopted control measures and associated EPS).
Maintain a dark zone between the rookery and the light sources.	Yes	The nearest breeding BIA is located over 100km away from the activity area on the Tasmanian islands of Bass Strait. As such, there is a large dark zone between potential rookeries and the activity area.
Turn off lights during fledgling season.	No	Operations are conducted 24-hours a day and light is necessary for personnel safety. Lighting will be reduced to the furthest extent possible for safe operations (see Table 6-29 and Appendix H).
Use curfews to manage lighting.	No	As above.
Aim lights downwards and direct them away from nesting areas.	Yes	Where practicable, lights will be directed towards working areas for the safety of personnel (see Table 6-29 and Appendix H).
Use flashing/intermittent lights instead of fixed beam.	No	Operations are conducted 24-hours a day and light is necessary for personnel safety. Lighting will be reduced to the furthest extent possible for safe operations (see Table 6-29 and Appendix H).
Use motion sensors to turn lights on only when needed.	No	As above.
Prevent indoor lighting reaching outdoor environment.	No	The light emitted from a cabin light is likely to be a room light of <60w or a bed light of 25W and a porthole size of 30-60 cm this is minimal and given the activity area is not in any nesting or breeding areas considered acceptable. Where practicable, lights will be directed towards working areas for the safety of personnel (see Table 6-29 and Appendix H).
Manage artificial light on jetties, wharves, marinas etc.	N/A	Not applicable to this activity.

Reduce unnecessary outdoor deck lighting on all vessels and permanent and floating oil and gas installations in known seabird foraging areas at sea.	Yes	Lighting will be reduced to that required for safe operations and by maritime legislative requirements (see Table 6-29 and Appendix H).
Night fishing should only occur with minimum deck lighting.	N/A	Not applicable – fishing is not permitted from the activity vessel.
Avoid shining light directly onto fishing gear in the water.	N/A	Not applicable – fishing is not permitted from the activity vessel.
Ensure lighting enables recording of any incidental catch, including by electronic monitoring systems.	N/A	Not applicable – fishing is not permitted from the activity vessel.
Avoid shining light directly onto longlines and/or illuminating baits in the water.	N/A	Not applicable – fishing is not permitted from the activity vessel.
Vessels working in seabird foraging areas during breeding season should implement a seabird management plan to prevent seabird landings on the ship, manage birds appropriately and report the interaction.	N/A	Most seabirds in the region are migratory, with the closest breeding BIAs for light sensitive seabirds which may forage in the area located over 100km from the activity area. See Appendix H for adopted control and associated EPS.
Use luminaires with spectral content appropriate for the species present.	No	The activity vessel is equipped with lighting required under legislation to identify itself to other vessels, reduce the risk of at-sea collision and provide for the safety of its crew. Most seabirds in the region are migratory, with the closest breeding BIAs for light sensitive seabirds located over 100km from the activity area. See Appendix H for adopted control and associated EPS.
Avoid high-intensity light of any colour.	No	As above.
Shield gas flares and locate them inland and away from seabird rookeries.	N/A	Not applicable – this activity does not involve flaring.

Minimise flaring on offshore oil and gas production facilities.	N/A	Not applicable – this activity does not involve flaring.
In facilities requiring intermittent night time inspections, turn on lights only while operators are moving around the facility.	N/A	The activity vessel is equipped with lighting required under legislation to identify itself to other vessels, reduce the risk of at-sea collision and provide for the safety of its crew.
Ensure industrial site/plant operators use head torches.	No	Operations are conducted 24-hours a day and lighting of all areas is necessary for personnel safety. As such, the use of head torches is not necessary. Lighting will be reduced so far as is practicable and in accordance with maritime requirements and personnel safety. See Appendix H for adopted control and associated EPS.
Supplement facility perimeter security lighting with computer-monitored infrared detection systems.	N/A	Not applicable to this activity.
Tourism operations around seabird colonies should manage torch usage so birds are not disturbed.	N/A	Not applicable to this activity.
Design and implement a rescue program for grounded birds.	No	Due to the distance between the activity area and seabird rookeries, grounding of birds is unlikely to occur and thus a rescue program is not necessary.

6.5.3 Controls

- **CMP30:** Lighting will be limited

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 6-28 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 (DCCEEW, 2023).</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 6-29 Good practice controls

Good practice	Adopted	Control	Rationale
National Light Pollution Guidelines for Wildlife (DCCEEW, 2023)	✓	CMP3030: Lighting will be limited	<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 • reduce deck lighting to a minimum required for human safety (on vessels moored near nocturnal shorebird

Good practice	Adopted	Control	Rationale
			<p>foraging and roost areas), and those vessels operating offshore</p> <ul style="list-style-type: none"> record bird 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 8.9.</p>

Table 6-30 Engineering risk assessment

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
Exclude night-time operations and use curfews to manage light	<p>Reduce chances of grounding or light sensitive species (e.g. marine turtles, seabirds and migrating shorebirds).</p> <p>Eliminates impacts on the diurnal cycle of marine fauna</p>	<p>Would increase the duration of the activity significantly and therefore increase the activity costs.</p> <p>If this was adopted to the activity, it would prolong the environmental impacts such as waste discharge, air emissions and displacement of commercial fishers.</p>	Not adopted
Turn lights off during fledging, breeding and migration season	Reduce impacts to natural behaviours during fledging, breeding and migration seasons	This would drastically increase the risks to workers on the vessel and disregard the work health and safety protocols.	Not adopted
Keep vessel external lighting to levels required for navigation, vessel safety and safety of deck operations (CMP30).	This will keep light to the minimum requirement to meet legislated navigation requirements	<p>No additional activity costs. Vessel lighting is a legislative requirement for safe navigation and deck operations.</p> <p>This is in alignment with the <i>National Light Pollution Guidelines for Wildlife</i> (DCCEEW, 2023), particularly the <i>Seabird Light Mitigation Toolbox</i> and <i>Migratory Shorebird Light Mitigation Toolbox</i>.</p>	Adopted
Aim lights downwards and direct them away from nesting areas (CMP30)	Reduces light spill from vessel and impacts on diurnal cycle of seabirds	Where practicable, lights will be directed towards working areas for the safety of personnel.	Adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
	and migratory shorebirds	<p>There are no nesting areas in the activity area with the shore 5km away from the closest nesting area.</p> <p>This is in alignment with the <i>National Light Pollution Guidelines for Wildlife</i> (DCCEEW, 2023), particularly the <i>Seabird Light Mitigation Toolbox</i> and <i>Migratory Shorebird Light Mitigation Toolbox</i>.</p>	
Use flashing/intermittent lights instead of fixed beam	Prevent grounding of seabirds and migratory shorebirds	This would drastically increase the risks to workers on the vessel and disregard the work health and safety protocols.	Not adopted
Ensure industrial site/plant operators use head torches	<p>Prevent grounding of seabirds and migratory shorebirds.</p> <p>Reduce light emissions by using smaller bulbs.</p>	This would drastically increase the risks to workers on the vessel and disregard the work health and safety protocols.	Not adopted
Reduce deck lighting to a minimum (CMP30)	Reduce unnecessary outdoor, deck lighting on all vessels and permanent and floating oil and gas installations in known seabird foraging areas at sea.	<p>Keep light to the minimum requirement to meet legislated navigation requirements. Ensure that investigation activities use only as required. For example, turning lights off in cabin when not in use.</p> <p>This is in alignment with the <i>National Light Pollution Guidelines for Wildlife</i> (DCCEEW, 2023), particularly the <i>Seabird Light Mitigation Toolbox</i> and <i>Migratory Shorebird Light Mitigation Toolbox</i>.</p>	Adopted
Use of lights with wavelengths that are less intrusive to marine fauna	Reduce impacts on marine fauna that are light sensitive to particular light wavelengths	<p>The range of intensity and light wavelengths for all marine fauna vary. Therefore, to cater for all fauna it causes a high cost of sourcing specialised globes.</p> <p>The different light wavelengths will impact the perception for workers on the vessel, which will</p>	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
		impact their ability to safely respond to marine survey investigations.	

6.5.6 Demonstration of acceptability

Table 6-31 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 (DCCEEW, 2023) have been adopted where relevant for 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".

Factor	Demonstration criteria	Criteria met	Rationale
	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.	✓	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 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 deck drainage and machinery space water that has been directed to a bilge water tank. Bilge water shall be diverted to a holding tank either for onshore disposal at an appropriately licensed facility, or for discharge with an oil content of less than 15 parts per million (ppm).

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 6-32 Decision Context and justification

Decision Context A
<p>Discharge of treated bilge and deck drainage 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. 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 6-33 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</p>

Good practice	Adopted	Control	Rationale
			<p>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 <15ppm 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 6-34 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 6-35 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</p>

Factor	Demonstration criteria	Criteria met	Rationale
			<p>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.
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), 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).

As per the *Greenhouse Gas Protocol: a Corporate Accounting and Reporting Standard* (World Resources Institute and World Business Council for Sustainable Development, 2004), GHG 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 – GHG emissions associated with the activity (i.e. combustion of MDO from the vessel engines, generators and fixed and mobile deck equipment during the activity). Since the vessels are contracted and not owned or operated by Esso, the vessel owners will report these emissions.
- 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 included within the activity.

Based on fuel use data from vessels that have recently worked in Bass Strait, it is estimated that G&G vessels would use approximately 7m³/day of MDO use while operating

Note any helicopter emissions would be minimal as this is only in the event of crew change occurring during a longer G&G campaign, which would be infrequent. If required, this would be included as an extra stop on the routine helicopter operations and captured as part of the base business emissions calculations and reporting.

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 0.08ppm and on an annual average of less than 0.015ppm. 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 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 (0.00039ppm or 0.74µg per m³) were restricted to within approximately 5km from the offshore MODU (BP, 2013).

Potential receptors above the sea surface within 5km 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.

6.7.2.2 Contribution to the global greenhouse gases effect

The following CO₂-e Scope 1 GHG emissions for the duration of this activity have been estimated using the National Greenhouse and Energy Reporting (NGER) online calculator:

- Vessel – 19 tonnes CO₂-e/day

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

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 6-36 Decision Context and justification

Decision Context A	
Emissions to air from venting and fuel combustion generated by vessels and other offshore facilities is a common occurrence both nationally and internationally.	
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 assessed as Consequence Level IV (the lowest level).	
No objections or claims were raised by relevant persons with regard to emissions to air.	
Esso believes ALARP Decision Context A should apply.	

Table 6-37 Good practice controls

Good practice	Adopted	Control	Rationale
MARPOL Annex I Regulations for the Prevention of Pollution by Oil.	✓	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 Protocol to the International Convention on Load Lines and MARPOL.

Good practice	Adopted	Control	Rationale
MARPOL Annex V Regulations for the Prevention of Pollution by Garbage from Ships.			<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 <15ppm 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 6-38 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 6-39 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	✓	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
	environmental damage.		
Legislative and other requirements	Legislative and other requirements have been identified and met.	✓	<p>The requirements of MARPOL Annex IV 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.

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	Residual Risk Category
1	Physical interaction – Marine Fauna	III	IV	E	4
2	Physical interaction – Invasive Marine Species	III	III	D	4
3	Accidental release – Dropped Objects	IV	IV	D	4
4	Accidental release – Waste	IV	IV	D	4
5	Accidental release – LoC Hazardous or non-hazardous substances	III	III	E	4
6	Accidental release – LoC Hazardous of refined oils	III	III	E	4

7.1 Physical interaction – Marine fauna

7.1.1 Causes of physical interaction with marine fauna

The movement of vessels has the potential to result in collision with marine fauna.

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 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 residual consequence from fauna strike is considered to be Consequence Level IV 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 slow speed of 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
IV	E	4

7.1.5 Controls

- **CM8:** Vessel Master
- **CMP26:** Fauna observations

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
Offshore petroleum operations are widely undertaken both locally, nationally and internationally.
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.
The consequence of any impact associated with a vessel strike was assessed as Consequence Level III.
No objections or concerns were raised by relevant persons with regard to the risk of physical interaction with marine fauna.
Esso believes ALARP Decision Context B should apply.

Table 7-4 Good practice controls

Good practice	Adopted	Control	Rationale
Part 8 Division 8.1 of the EPBC Regulations. <i>Australian National Guidelines for Whale and</i>	✓	CM8: Vessel Master	The Vessel Master has responsibility for ensuring the requirements of these Regulations and Guidelines are followed. The Guidelines describe strategies to ensure whales and dolphins are not harmed during offshore interactions with people.

Good practice	Adopted	Control	Rationale
<i>Dolphin Watching 2017</i> (Commonwealth of Australia, 2017).			<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>
Marine fauna observations	✓	CMP26: Fauna observations	<p>There will always be two dedicated Watch Keepers on board the vessel with at least one shift on the bridge (24/7).</p> <p>Watchkeeper is an international certification issued under Marine Order 70 2014 and Marine Order 71 2023 under the <i>Navigation Act 2012</i>.</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 seals which are known to approach/play with vessels while stationary on DP.	<p>Smaller support vessels (such as those used to deploy ROVs) do not generally 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>	Not adopted**
No night-time/low	Reduces the likelihood of collision or	No nighttime operations will double the length of time required to	Not adopted

Additional, alternative, improved controls	Benefit	Cost/feasibility	Adopted
visibility operations	entanglement with megafauna.	complete the activity which results in increased impacts and risks in other areas such as more routine discharges, greater collision risk due to additional time spent on-water, etc. Therefore, the costs to the survey are considered grossly disproportionate to the environmental benefits given the low residual risk to marine megafauna populations. .	

** 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.	✓	Requirements of the EPBC Regulations – Part 8 Division 8.1: Interacting with cetaceans, although more relevant for tourism activities, have been adopted.

Factor	Demonstration criteria	Criteria met	Rationale
			<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> <ul style="list-style-type: none"> • CMPBW • <i>National Recovery Plan for the Southern Right Whale (<i>Eubalaena australis</i>)</i> (DCCEEW, 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>Conservation Advice for leatherback turtles</i> (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.	✓	<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 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 vessels containing foreign species
- translocation of foreign species through biofouling of the 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) and has been identified at some survey locations

during offshore environmental surveys undertaken by Esso in 2023. Figure 7-1 shows the current known distribution of the New Zealand screw shell.

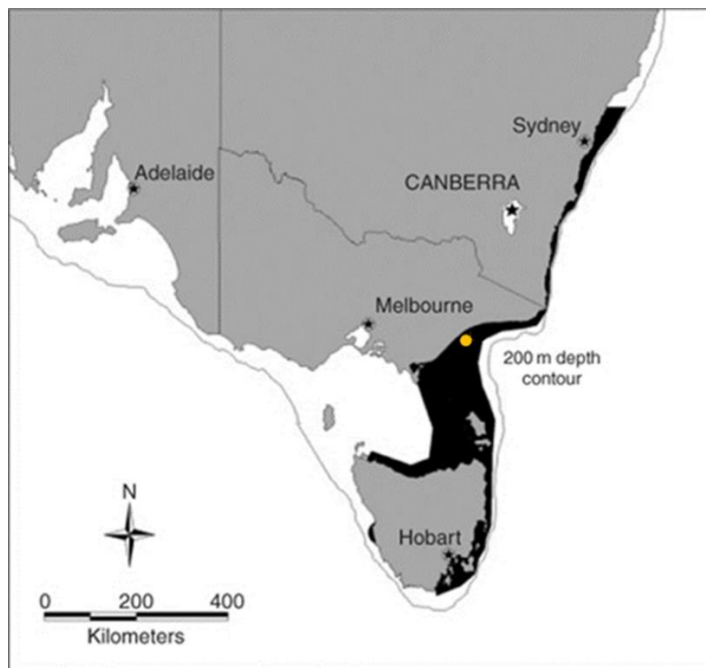


Figure 7-1 Current known distribution (in black) of New Zealand screw shell in Australian waters (Environment Australia, 2003)

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 amurens*) 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 15km 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.

VESSEL OPERATIONS

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.

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>

Decision Context B

No issues, objections or claims were raised by relevant persons with regard to the risk of introduction of IMS.

Based on the Consequence Level III rating, Esso believes ALARP Decision Context B should apply.

Table 7-9 Good practice controls

Good practice	Adopted	Control	Rationale
Ballast Water Management (BWM) Convention	✓	CM23: Ballast Water Management plan CM24: Ballast water Management certificate	<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	✓	CM25: Biosecurity clearance when entering	<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</p>

Good practice	Adopted	Control	Rationale
		Australian territory	<p>obtained from the Department of Agriculture, Fisheries and Forestry (DAFF).</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 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 <i>Biosecurity (Exposed conveyance – exceptions from biosecurity control) Determination 2016</i>.</p>
<i>Australian Ballast Water Management Requirements Version 8</i> (DAWE, 2020)	✓	CM8: Vessel Master	<p>The Vessel Master has responsibility for ensuring these Requirements are followed.</p> <p>The Requirements describe the obligations on the Vessel Master and vessel operators with regards to the management of ballast water and sediments prior to and 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 500m from the offshore installation and no closer than 12nm from the nearest land.</p>
<i>Australian biofouling management requirements (Version 1.)</i> (DAWE, 2022)	✓	CM26: Invasive Marine Species Risk Assessment Procedure	<p>Biofouling risk in accordance with <i>Australian biofouling management requirements (Version 1.)</i> (DAWE, 2022) 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 including (where relevant):</p>

Good practice	Adopted	Control	Rationale
			<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 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 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 National Biofouling Guidelines (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 must be sought for the activity.</p>

Good practice	Adopted	Control	Rationale
Removal of sediment from coring equipment	✓	CMP8: Immersible retrievable equipment cleaning	Management of submersible equipment will be in accordance with the National Biofouling Guidelines 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 benefit associated with implementing this measure.	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) achieved and is not reasonably practicable.	Not adopted
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

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.	✓	There is potential for a localised, but irreversible, impact to benthic communities resulting in a Consequence Level III. This impact is limited in extent (i.e. localised) and 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.	✓	<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> <p>It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.</p>
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>

Factor	Demonstration criteria	Criteria met	Rationale
			<ul style="list-style-type: none"> • Biosecurity Act 2015 • Protection of the Sea (Harmful Anti-fouling Systems) Act 2006 • Marine Order 98 (Marine pollution – anti-fouling systems) 2013. <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.	✓	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	✓	No relevant person concerns have been raised concerning the risk of introduction of IMS.

Factor	Demonstration criteria	Criteria met	Rationale
	through the consultation process.		

7.3 Accidental release – Dropped objects

7.3.1 Causes of dropped objects

Survey equipment may be accidentally dropped from the vessel into the sea, lost when deployed on the seabed, or lost when towed from the vessel, causing seabed disturbance. Potential dropped objects include small numbers of personnel protective gear (e.g. glasses, gloves, hard hats), small tools (e.g. spanners) hardware fixtures (e.g. riser hose clamp) and drill equipment (e.g. drill pipe).

Note, due to the size of dropped objects there is no possibility of any significant damage to seabed infrastructure of pipelines and therefore no risk possible loss of containment events are considered further.

7.3.2 Risks of dropped objects

The accidental release of dropped objects has the potential to result in:

- change in habitat
- change in water quality.

7.3.3 Risk assessment

7.3.3.1 Change in habitat

In the unlikely event of an accidental loss of geotechnical equipment (e.g. seabed reaction frames; drill collars/drill pipe; corers; cone penetrometer; T-bar) potential environmental effects will be limited to localised physical impacts on benthic communities arising from equipment sinking to and dragging across the seabed. Dragging of equipment along the seabed may result in localised physical disturbance. However, given the water depth range within the operational area (36-100m), the absence of any shallow waters (<20m water depth) and any emergent features within or immediately adjacent to the operational area, and the size/weight of the geotechnical equipment being used during the survey, the risk of significant impacts resulting from equipment loss is considered to be low.

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 10m²) 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 license areas is largely sandy sediment with benthic assemblages (predominantly polychaetes (worms), crustaceans and molluscs) and not particularly susceptible to physical disturbance.

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.

7.3.4 Residual risk ranking

Table 7-12 Residual risk ranking outcome

Consequence Level	Likelihood Category	Risk Category
IV	D	4

7.3.5 Controls

- **CMP10:** Crane handling and transfer procedures
- **CM18:** Preventative Maintenance System (PMS)
- **CM19:** Cargo securing manual

Refer to [Appendix H](#) for corresponding descriptions of EPOs and EPSs, and measurement criteria.

7.3.6 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	✓	CMP10: Crane handling and transfer procedures	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 off-shore platforms. The vessels holds Cargo Gear Certificates which certify that the deck cranes and accessory gear are compliant with API RP 2D.
Maintenance of lifting gear	✓	CM18: PMS	It is industry good practice that a PMS is in place to ensure that the lifting gear continues to operate at the required standard.
SOLAS Chapter VI Carriage of Cargoes and Chapter VII Carriage of	✓	CM19: Cargo securing manual	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

Good practice	Adopted	Control	Rationale
Dangerous Goods (SOLAS, 1974).			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

7.3.7 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.	✓	<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 seabed to a greater extent than is necessary for the exercise of the rights conferred by titles granted.

Factor	Demonstration criteria	Criteria met	Rationale
			<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 submission to NOPSEMA including 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. <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.

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 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 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.

Vessels use 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 Vessels waste management procedure addresses 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 license areas. The PBW has foraging habitat overlapping the activity area and the SRW migration BIA also overlaps the activity area. The great white shark breeding and distribution BIAs overlap the activity area.

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	<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 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</p>

Good practice	Adopted	Control	Rationale
			<p>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 seabed to a greater extent

Factor	Demonstration criteria	Criteria met	Rationale
			<p>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. Causes of accidental releases from the vessels and ROVs may include:

- failure or mechanical breakdown of equipment that use, store or transfer hazardous or non-hazardous materials
- leak from ROV hydraulic line
- overfilling of chemical fluid tanks
- overfilling of fuel bulk storage tanks.

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 a vessel 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 20L.

Operational fluids such as 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 250m³ per hour, this equates to an instantaneous spill of approximately 63m³.

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.
- 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 (Brussaard, et al., 2016). 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:** Procedure for bulk transfer of fluids from support vessel
- **CMP13:** Design and certification of hoses
- **CM18:** Preventative Maintenance System (PMS)
- **CM22:** Remotely Operated Vehicle International Marine Contractor Association audit
- **CMP14:** Bunding
- **CMP20:** 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: Procedure for bulk transfer of fluids from support vessel	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 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.

Good practice	Adopted	Control	Rationale
Maintenance of hoses and equipment	✓	CM18: Preventative Maintenance System	It is industry good practice that a Preventative Maintenance System (PMS) is in place to ensure that hoses and equipment are inspected and replaced when degraded.
ROV condition check	✓	CM22: Remotely operated vehicle International Marine contractors association audit	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.
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>

Good practice	Adopted	Control	Rationale
			<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.

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 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 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	✓	No relevant person concerns have been raised concerning the

Factor	Demonstration criteria	Criteria met	Rationale
	considered/addressed through the consultation process.		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 vessels 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 (RPS, 2019).

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 EMBA as 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 7-27 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

Scenario	Location	Latitude	Longitude	Depth (mLAT)	Spill volume (m3)
5	Halibut platform	38°24'16" S	148°19'13" E	73	220

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	280m 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 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.			
Release duration	6 hours			
Modelled duration	30 days			
MDO Characteristics:				
Density	829kg/m ³ @ 15°C			
API gravity	37.6			
Dynamic viscosity	4.0cP @ 25°C			
Pour point	-14°C			
Oil property category	Group II (light persistent oil)			
Boiling point	Volatile (<180°C)	Semi-volatile (180–265°C)	Low volatility (265–38 °C)	Residual (>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.

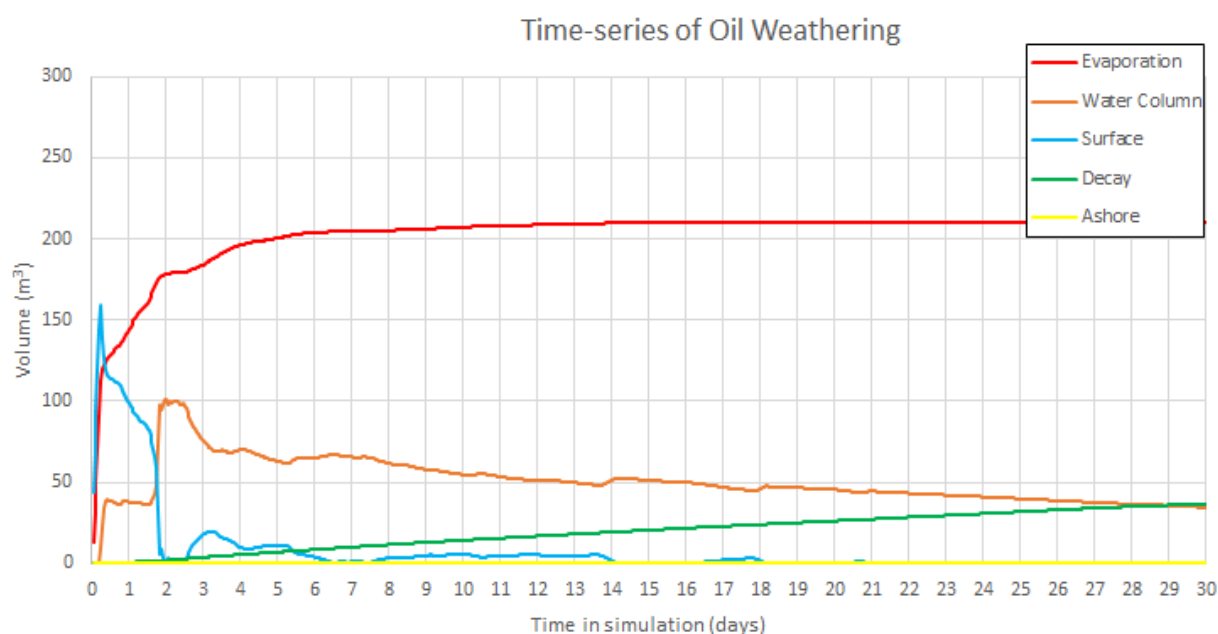


Figure 7-2 Predicted weathering and fates graph as volume for the selected single Perch MDO spill trajectory

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 (10g/m ²)	<p>Maximum distance from release site is 24km 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 –breeding. <p>The spill does not extend into state waters or contact any marine parks at this threshold.</p>
	High (50g/m ²)	<p>Maximum distance from release site is 1km 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 (100g/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 7km.</p> <p>The minimum time before shoreline accumulation at this threshold is 28 hours.</p>
In-water (dissolved) exposure	Moderate (50ppb 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)
Surface exposure	Low (1g/m ²)	<p>Maximum 75km 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> <p>The modelling predicts no contact with any KEFs or AMPs.</p>
Shoreline exposure	Low (10g/m ²)	<p>There is a 1-2% probability of shoreline contact in the Wellington and Woodside Beach shoreline sectors.</p>
In-water (dissolved) exposure	Low (10ppb instantaneous)	<p>Exposure will be confined to the surface 10m 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 (10ppb instantaneous)	<p>Exposure will be confined to the surface 10m 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 • Spotted bottlenose dolphin – breeding BIA • Little 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

Model parameter	Exposure value	Stochastic modelling (based on 100 annualised spill trajectories) Perch (as representative spill location)
		<ul style="list-style-type: none"> 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	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.	There is no predicted exposure above the moderate in-water (dissolved) threshold. The consequences to plankton are assessed as Consequence Level IV.
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</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>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 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>	
Marine reptiles – Turtles	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	While marine turtles are known to occur in the area potentially exposed to MDO at moderate – high concentrations, they do

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>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 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 0.5cm 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</p>	<p>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 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>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. 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	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,	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

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>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 (CoA, 2022). 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 (CoA, 2022). The greatest vulnerability in this case occurs when birds are feeding or resting at the sea surface (Peakall, Wells, & Mackay, A hazard assessment of chemically dispersed oil spills and seabirds., 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 (325MT 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>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> <p>The maximum length of shoreline predicted to be exposed to shoreline loading of hydrocarbons that may have biological impacts to birds (greater than 100g/m²) is 9km.</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.</p>

Receptor	Impact of MDO exposure	Exposure risk assessment
	<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 21.3mgs 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 10µm (approximately 10g/m²) (Engelhardt, Petroleum effects on marine mammals, 1983) (Clark R. B., 1984) (Geraci & St. Aubin, 1988) (Jenssen, 1994). A layer 25µm thick would be harmful for most birds that contact the slick (Scholten, et al., 1996).</p>	<p>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>
Marine mammals (Pinnipeds)	Pinnipeds are directly at risk from impacts associated with the exposure to surface, shoreline and in-water hydrocarbons.	Seals are known to occur within the area exposed to moderate-high surface threshold. However, these areas are not identified

Receptor	Impact of MDO exposure	Exposure risk assessment
	<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 (Geraci & St. 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>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>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.</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>	

Receptor	Impact of MDO exposure	Exposure risk assessment
	<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 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>	
Marine mammals (Cetaceans)	<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 25µm 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</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 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 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</p>	

Receptor	Impact of MDO exposure	Exposure risk assessment
	distances between breeding grounds within a season (National Recovery Plan for the Southern Right Whale). 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.	
Coastal habitat – Sandy shoreline	<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 • 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>The maximum length of coastline potentially at risk from stranded oil at the moderate threshold is 9km. 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 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>A 100g/m² threshold (considered a 'stain' or 'film', and equivalent to 0.1mm thickness) is assumed as the lethal threshold for invertebrates on hard substrates and sediments (mud, silt, sand, gravel) in intertidal habitats. A threshold of 100g/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 7km 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 (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</p>	

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>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, Halanynch, 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>
Commercial fisheries	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	Several commercial fisheries may operate within the area potentially exposed to an MDO plume and a temporary fisheries closure may be put in place.

Receptor	Impact of MDO exposure	Exposure risk assessment
	<p>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 0.1ppm, marine fuel oil concentrations of 0.33ppm and diesel concentrations of 0.25ppm (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>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 Gunaikurnai 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.	Tourism and recreation is also linked to the presence of marine fauna (e.g. whales), particular habitats and locations for swimming or recreational fishing.

Receptor	Impact of MDO exposure	Exposure risk assessment
		<p>The modelling predicts a low probability of visible oil extending into Victorian waters (including Ninety Mile Beach Marine 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

- **CM18:** Vessel PMS
- **CM28:** Activity Specific Operating Guidelines/Critical Activity Mode Procedures (ASOG)
- **CM29:** Vessel Dynamic Positioning System
- **CM36:** Pre start Notifications
- **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 is common practice for activities such as fuel transfer, provision of cargo, and 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.	✓	CM18: Vessel PMS	Vessels are maintained to ensure navigation equipment is operational.
Structured operational limits criteria for DP operations.	✓	CM28: Activity Specific Operating Guidelines/Critical Activity Mode Procedures (ASOG)	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

Good practice	Adopted	Control	Rationale
			safe DP operations while carrying out a specific activity.
DP Class 2.	✓	CM29: 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 capability may cause personnel injury, pollution or damage with large economic consequences.
Pre-start notifications.	✓	CM36: Pres start notifications	<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 activities will be published in Notices to Mariners, thus enabling other marine users to plan their activities, and minimising disruption.</p> <p>Relevant details will be provided to the JRCC to enable AUSCOAST warnings to be disseminated.</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</p>

Good practice	Adopted	Control	Rationale
			<p>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.
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.
	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"> Navigation Act 2012 – Chapter 6 (Safety of Navigation) 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"> Protection of the Sea (Prevention of Pollution from Ships) Act 1983 Navigation Act 2012 – Chapter 4 (Prevention of Pollution) Marine Order 91 (Marine pollution prevention – oil) 2014.

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.	✓	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.	✓	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 • 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.	✓	No relevant person concerns have been raised concerning the risk of LOC resulting from a vessel collision.

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 Element	OIMS	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
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
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

Corporate Element	OIMS	Upstream OIMS		
		Number	Title	Linked Corporate OIMS Expectations
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 6-3:** 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.

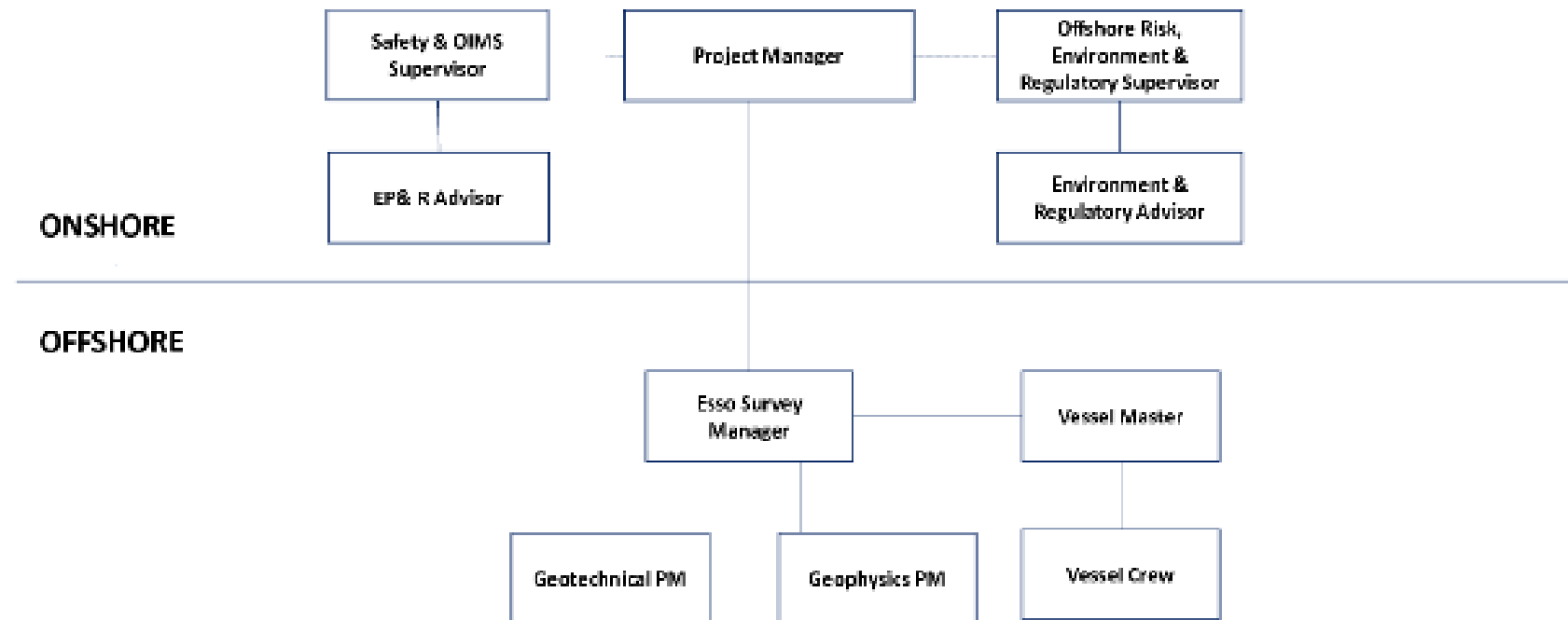


Figure 8-2 General organisation chart for this EP

Table 8-2 Activity-specific key roles and responsibilities for this EP

Role	Responsibilities
Esso Project Manager	<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. 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.
Esso Environment & Regulatory Advisor	<ul style="list-style-type: none"> Pre-mobilisation audit of procedures and practices to ensure compliance with EP. Ensuring audit non-conformances are closed out. Pre-mobilisation audit of waste logs of the vessel to demonstrate compliance with MARPOL. Ensuring all required audits and reviews are undertaken in accordance with the regulatory requirements and as required by this EP. Incident investigation. Maintain a stakeholder consultation log. Notification and reporting of all recordable and reportable incidents within the specified time frames.
Survey Manager (Esso or 3 rd Party contractor advisor)	<ul style="list-style-type: none"> Reports to the Esso Project Manager for the timely and professional conduct of the survey in the field, Ensures all survey procedures and specifications are fulfilled, and coordinating the movements of contractor personnel offshore. The field point of contact between Esso and its contractors during survey operations offshore and will be in regular contact with both the Contract Holder and Project Manager. Responsible for monitoring data quality, whilst the survey Vessel Master is ultimately responsible for vessel safety. Responsible for decisions relating to suspension of survey operations and when to recommence. Responsible for the conduct of the contract between Esso and sub-contractors for the surveys
Environmental Advisor (Esso)	<ul style="list-style-type: none"> Undertakes duties as delegated by Offshore Risk, Environment and Regulatory Supervisor. Prepares environmental/regulatory content for inductions and ensures personnel receive the induction and that attendance records are maintained. Completes/coordinates EP compliance audits. 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).
Vessel Masters (Vessel Contractors)	<ul style="list-style-type: none"> Vessel Master is ultimately responsible for the vessel safety and crew. Ensures compliance with all applicable navigational safety standards, legislation and regulations.

Role	Responsibilities
	<ul style="list-style-type: none"> 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.
Geotechnical and Geophysical PMs	<ul style="list-style-type: none"> Responsible for the correct operation of each system employed together with the regular checks, tests and maintenance of each component that comprises the particular system. They will be experienced, reliable and professional in their approach to the tasks required. Any project specific training required for this survey will be conducted prior to the commencement of operations.

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.

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.

Training/course	Delivered by	Training description
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 through where the training provider is accredited to provide this certification.</p>
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	The course is typically run over two days and includes theory and practical activities including:

Training/course	Delivered by	Training description
		<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 • how to present oil spill information back through the Esso IMT in a clear and coherent manner.
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.
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 1 – 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 Esso 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.

8.6.2.3 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 8-4.

Table 8-4 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).
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).

Section	Role	Mandatory competencies and training
		<ul style="list-style-type: none"> IMO II – Oil Spill Management, or IMO III – Command and Control. Experience in fulfilling Planning Section role. Participate in regular drills and exercises.
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). Experience in fulfilling Logistics Section Chief role. 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 logistic operations. Participate in regular drills and exercises.
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. Participate in regular drills and exercises.

Section	Role	Mandatory competencies and training
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. Participate in regular drills and exercises.
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 OSMF Modules, as directed by the Planning Section Chief.

8.7 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.

8.8 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.

8.9 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).

8.9.1 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.

8.9.1.1 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.cefass.co.uk/cefass-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.

8.9.1.2 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.

8.9.1.3 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.

8.9.2 *Audit, inspection and assessments*

8.9.2.1 *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.

8.9.2.2 *Audits - Environment Plan compliance*

Esso will undertake a pre campaign 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 8.12.1.

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.

8.9.3 *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.

8.9.4 *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 Vessel 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 8-5 summarises the monitoring requirements for routine operations.

The process for managing environmental monitoring records is addressed through OIMS System 4-1.

Table 8-5 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.
Spill to sea	Chemical/oil type Volume	By incident event	Incident report. End of activity environmental performance report.
Drilling and Coring Operations	Volume/quantities of constituents used for drilling	Ongoing	Offshore Survey Manager/Geotechnical Lead
	Total number of boreholes drilled and location		
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	Tallied at end of activity from daily reports	Daily reports.

8.9.5 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 8-6.

Table 8-6 Routine Environment Plan reporting requirements

Requirement	Timing	Contact
Submit an EP environmental performance report to NOPSEMA	EP environmental performance report will be submitted to NOPSEMA annually summarising the campaign activities.	NOPSEMA - submissions@nopsema.gov.au
Notify NOPSEMA of the commencement date	At least 10 days prior to activity. Note this is for each individual campaign.	
Notify NOPSEMA of the completion date	Within 10 days of activity completion. Note this is for each individual campaign.	
Notification of EP completion	Within 10 days of activity finalisation and obligation completion.	

8.10 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) Regulations and in accordance with the NOPSEMA Guidelines for when to submit a proposed revision of an EP (NOPSEMA, 2024). 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.

8.11 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).

8.11.1 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.

8.11.2 Vessel Environmental Management System

All vessels engaged will have suitable environmental management systems in place that are evaluated as part of the contractor selection process.

8.11.3 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.

8.12 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.

8.12.1 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 8-7).

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.

8.12.2 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 8-7. 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 8-7 External incident notification and reporting requirements

Requirement	Timing	Contact
Recordable incidents		

Requirement	Timing	Contact
<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 similar incident occurring in the future. <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>	<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>
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 	<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,</p>	<p>NOPSEMA – 1300 674 472</p> <p>DEECA – Earth Resources Regulation Compliance Duty Officer - 0419 597 010 (24-hour)</p> <p>NOPSEMA-Submissions@nopsema.gov.au</p> <p>DTP- marine.pollution@transport.vic.gov.au</p> <p>State Duty Officer: 0409 858 715</p>

Requirement	Timing	Contact
<ul style="list-style-type: none"> the corrective action that has been taken or is proposed to be taken to stop, control or remedy the reportable incident. 	<p>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>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, for whatever reason, including those for the purpose of securing the safety of the ship or for saving life at sea 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: <ul style="list-style-type: none"> 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>Vessel Master to notify AMSA verbally without delay. If AMSA asks for a written MARPOL pollution report this must be provided within 24 hours after AMSA asks for the report.</p>	<p>AMSA</p> <p>+61 02 6230 6811 or 1800 641 792</p> <p>rcsaus@amsa.gov.au</p>
<p>Notification of any observed marine pest is to be provided to DEECA and copied to DAFF, with the following information:</p>	<p>As soon as possible</p>	<p>DEECA – 136 186</p> <p>marine.pest@agriculture.vic.gov.au or via the</p>

Requirement	Timing	Contact
<ul style="list-style-type: none"> • date and time • species details, if known, including numbers sighted • location, GPS coordinates if possible • habitat • water depth • photographs including close-up and from different angles if possible 		<p>online form (Report a marine pest sighting\marine pest\biosecurity\agriculture Victoria.</p> <p>DaFF – ccimpe@aff.gov.au</p> <p>Env Advisor to notify JV partner Woodside Energy (Bass Strait) Pty Ltd – bass.strait@woodside.com</p>
Oiled wildlife	Immediately	<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>
Wildlife emergency	Immediately	<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>
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	Within 7 days	<p>DCCEEW-</p> <p>Environmental Compliance Hotline: 1800 110 395</p>

Requirement	Timing	Contact
species caused by, or suspected to have been caused by petroleum activity)		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)

8.13 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.

8.14 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:

- The Vessel Operator's SMPEP
- 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 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 the Vessel operator and Esso will interact in the event of an emergency. A campaign specific Contacts Directory listing all contact numbers will also be developed.

8.14.1 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.

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 radius of the Vessel 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, 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.

8.14.2 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. This information is summarised in Attachment 2.

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 EMBA is predicted to be 2% (see Section 7.6.2.3).

8.14.3 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]
 - 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. Details of testing schedule is outlined in the Bass Strait Operations EP ([AUGO-EV-EMM-002](#)).

8.15 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

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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 spill simulations from a marine diesel oil (MDO) spill due to a vessel collision at Perch Platform, West Kingfish Platform, Kipper Facility, Barracouta Platform and Halibut A Platform. The Perch, West Kingfish, Kipper and Barracouta spills simulate the surface release of 280 m³ of MDO over 6 hrs (tracked for 30 days) and the Halibut spill simulates the surface release of 220 m³ of MDO over 6 hrs (tracked for 20 days), all 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."

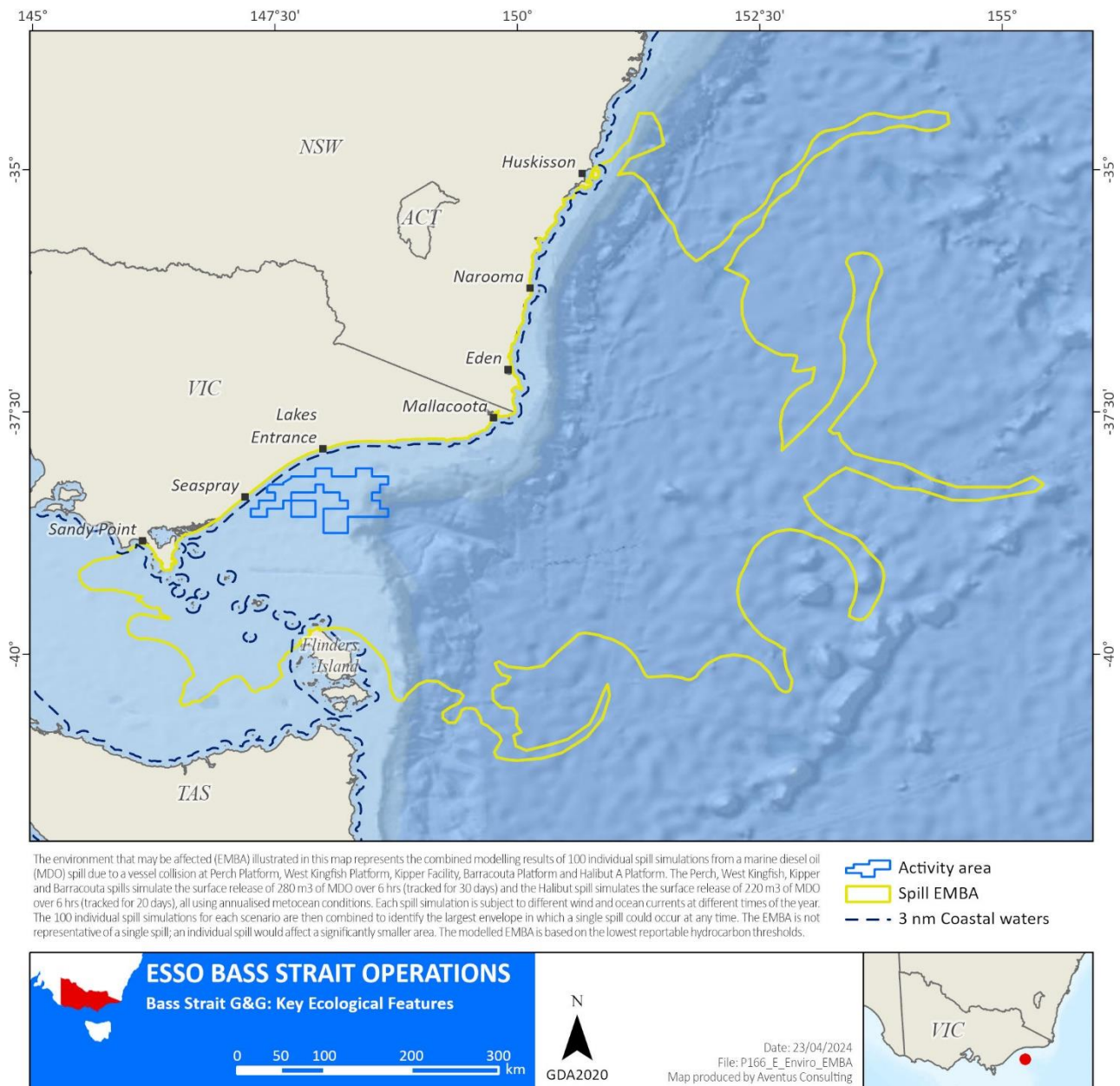


Figure 1-1 Bass Strait G&G EMBA

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. There are no World Heritage sites within the EMBA, the closest being the Sydney Opera house which is approximately 62 km northwest of the EMBA.

1.1.2 National Heritage

National heritage is defined in Table 3-2 of the EP. There are no National Heritage sites within the EMBA, the closest being Australian Alps National Parks and Reserves (located onshore) which is approximately 29 km north of the EMBA.

1.1.3 Commonwealth Heritage

Commonwealth heritage is defined in Table 3-1 of the EP. Two Commonwealth Heritage Listed sites are within the EMBA which are described below and shown in Figure 1-2.

- natural heritage:
 - 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.
- indigenous heritage:
 - 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).

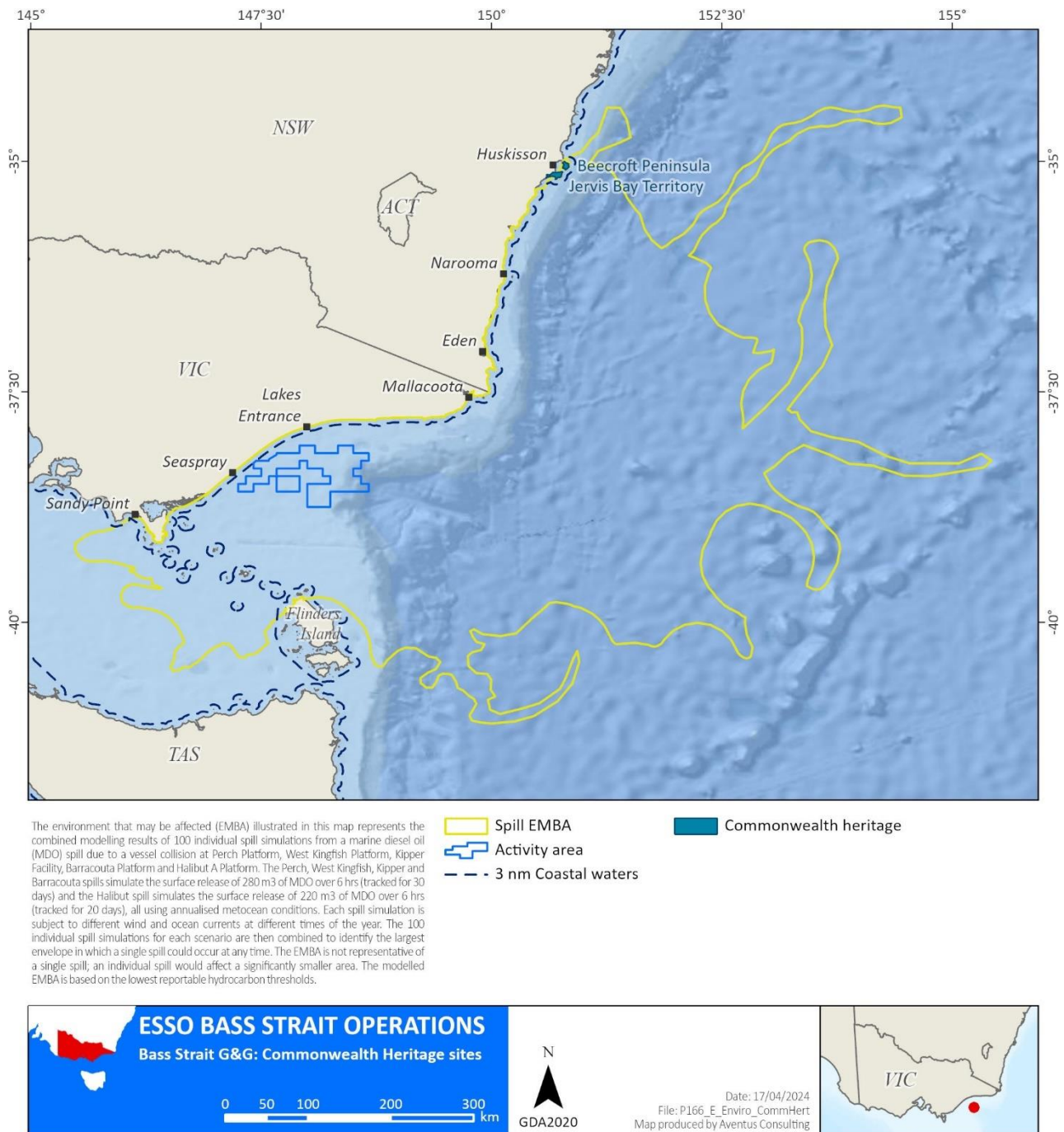


Figure 1-2 Commonwealth heritage listed sites intercepted by the EMBA

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 1-3.

1.1.4.1 Gippsland Lakes

The following information was extracted from the Australian Wetlands Database (DCCEE, 2019a).

The Gippsland Lakes Ramsar Site, located in Victoria is a series of large, shallow, coastal lagoons approximately 70 km in length and 10 km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364 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 (DCCEE, 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.

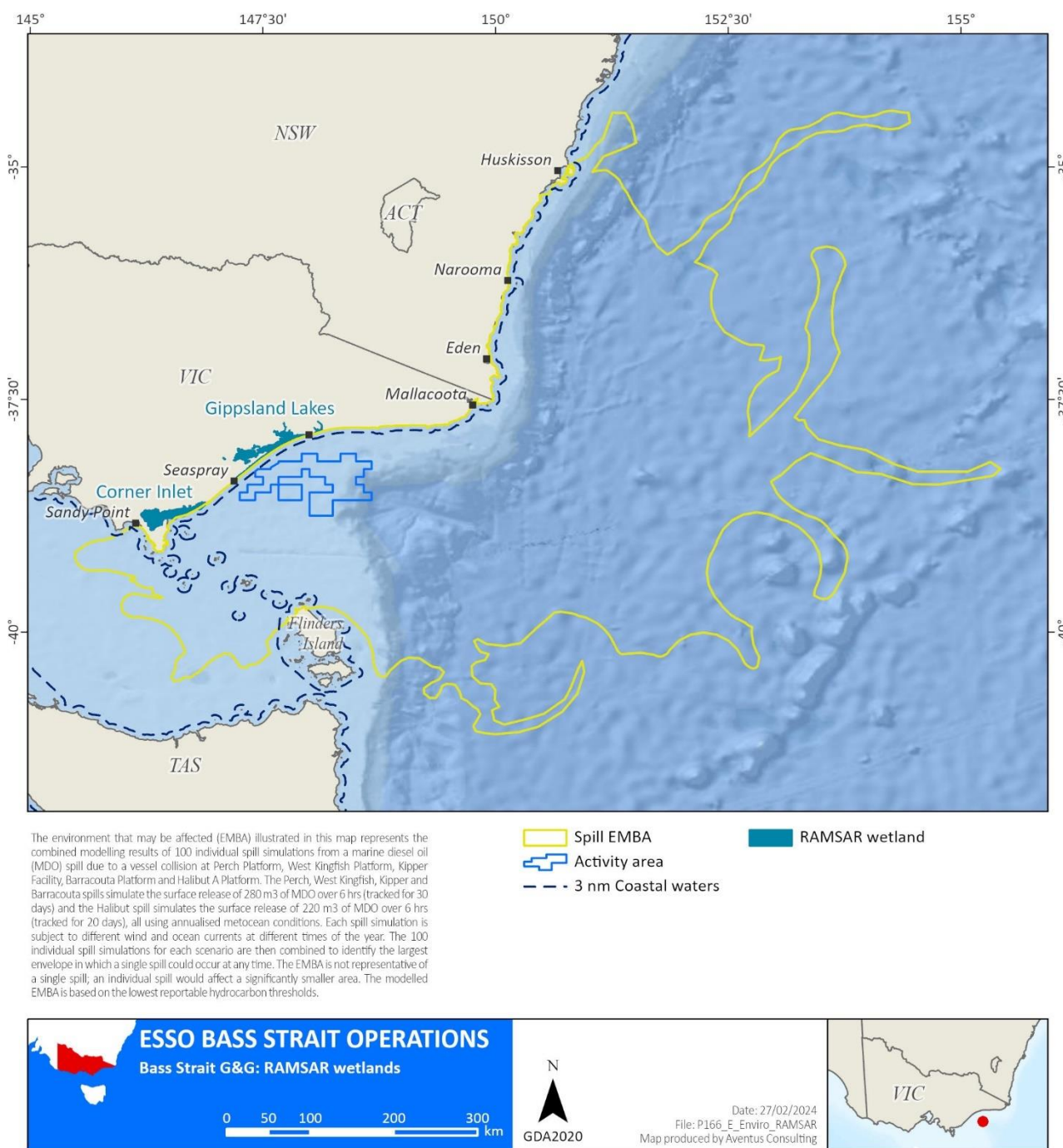


Figure 1-3 RAMSAR wetlands intercepted by the EMBA

1.1.5 *Nationally Important Wetlands*

Nationally important wetlands (NIWs) are defined in Table 3-2 of the EP. The following 21 NIWs listed below are intercepted by the EMBA and shown in Figure 1-4. 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:
 - Benedore River
 - Corner Inlet
 - Ewing's Marsh (Morass)
 - Lake Bunga
 - Lake King Wetlands
 - Lake Tyers
 - Mallacoota Inlet Wetlands
 - Shallow Inlet Marine & Coastal Park
 - Snowy River
 - Sydenham Inlet Wetlands
 - Tamboon Inlet Wetlands
 - Thurra River
- NSW:
 - Beecroft Peninsula
 - Clyde River Estuary
 - Jervis Bay Sea Cliffs
 - Meroo Lake Wetland Complex
 - Nadgee Lake and tributary wetlands
 - Pambula Estuarine Wetlands
 - Swan Lagoon
 - Termeil Lake Wetland Complex
 - Tuross River Estuary

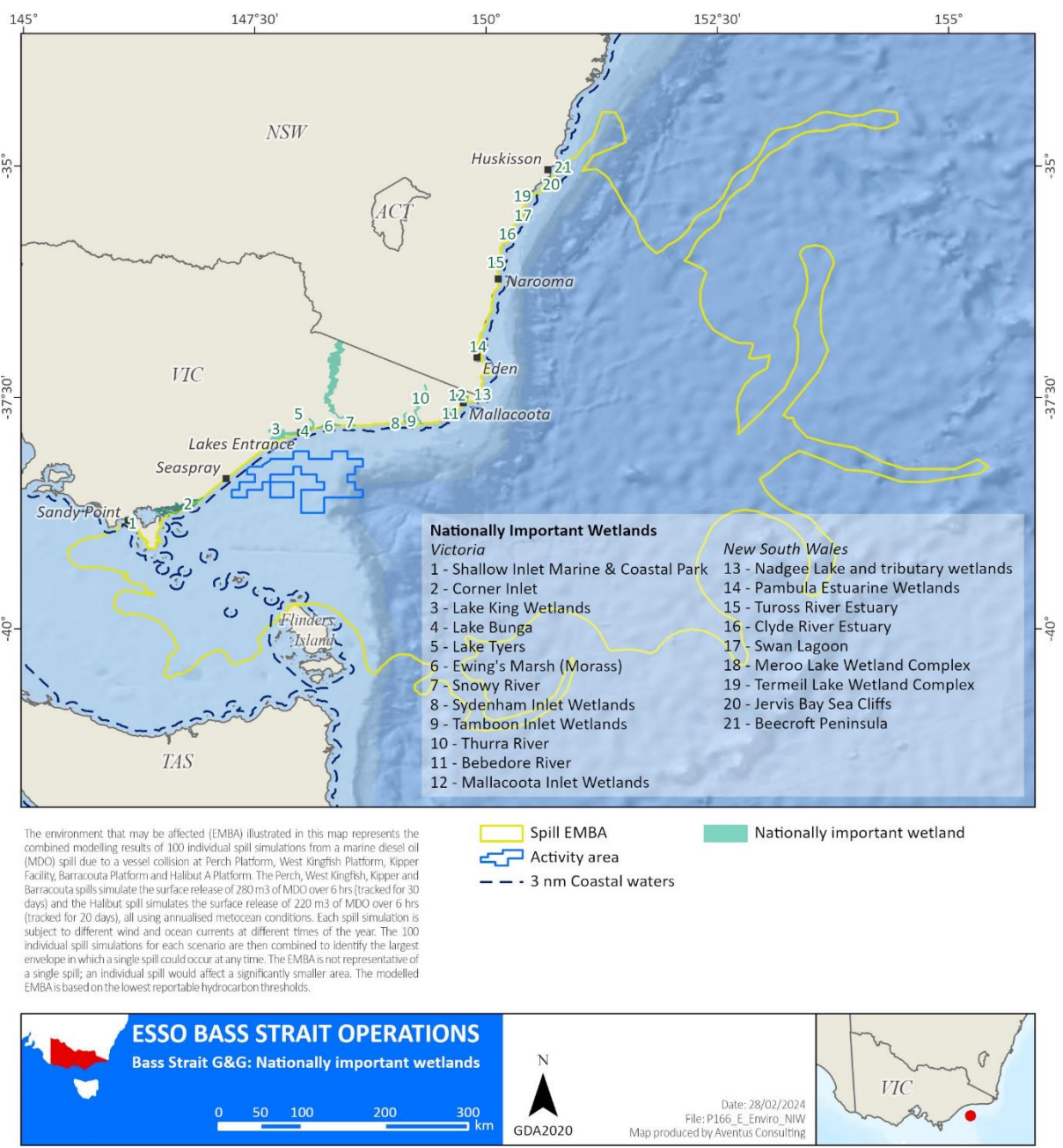


Figure 1-4 NIWs within the EMBA

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 1-5. 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 Thickets of Eastern Australia

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 8 m 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 8 m 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 arboreal species.

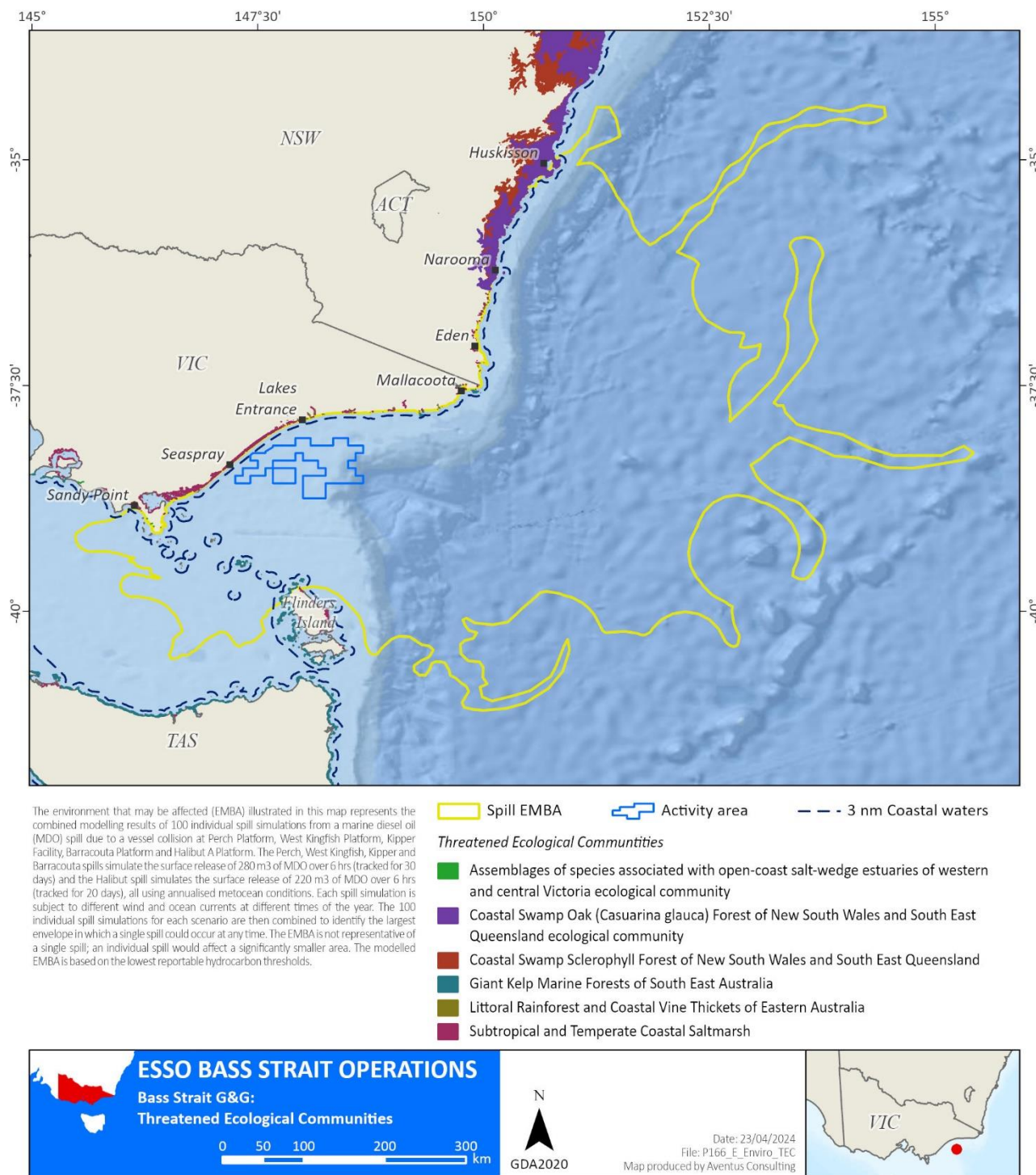


Figure 1-5 TECs within the EMBA

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 1-6.

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 4,000 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 seafloor 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 includes 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).

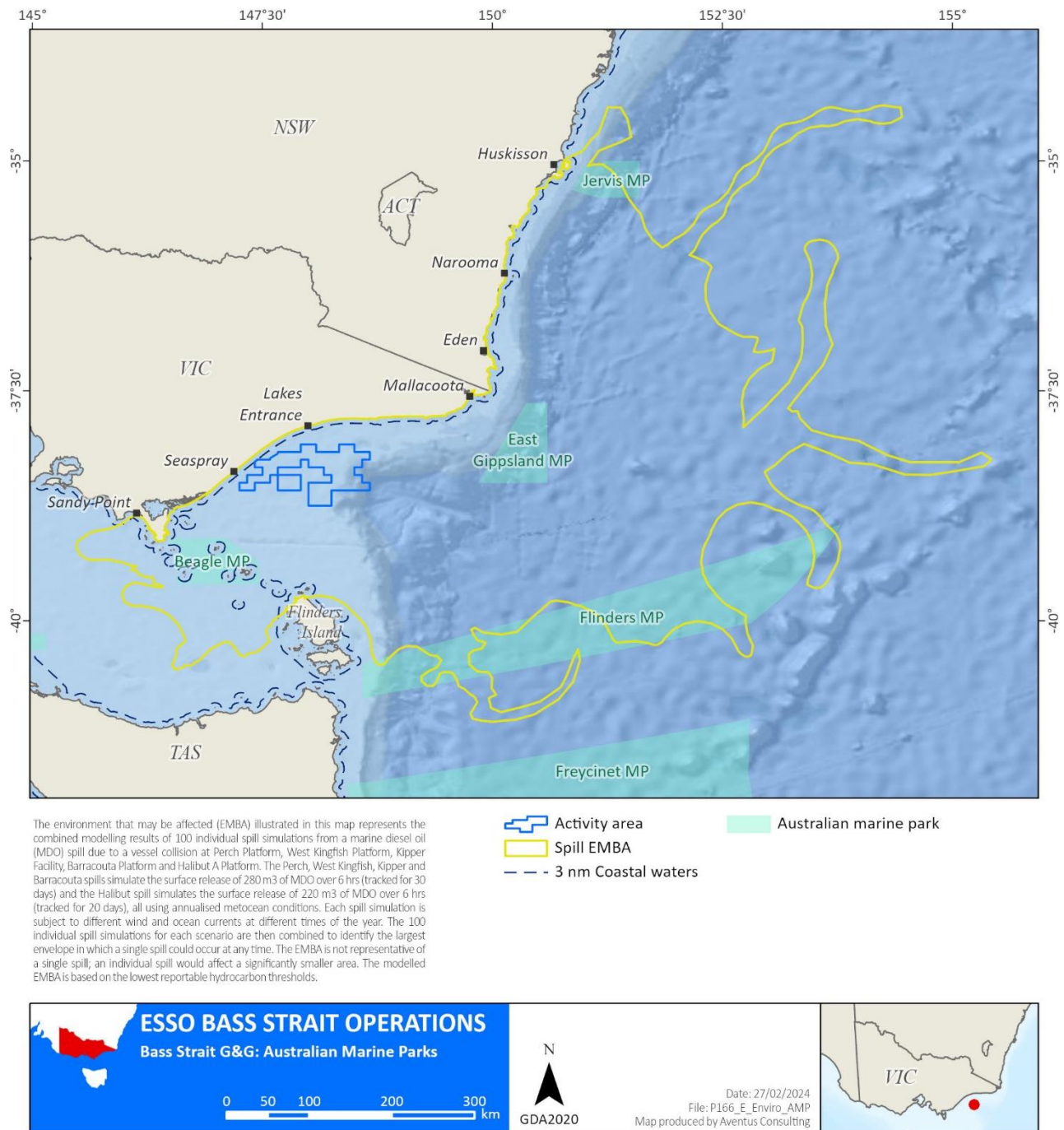


Figure 1-6 AMPs within the EMBA

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 1-7.

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 cyaneus*).

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.

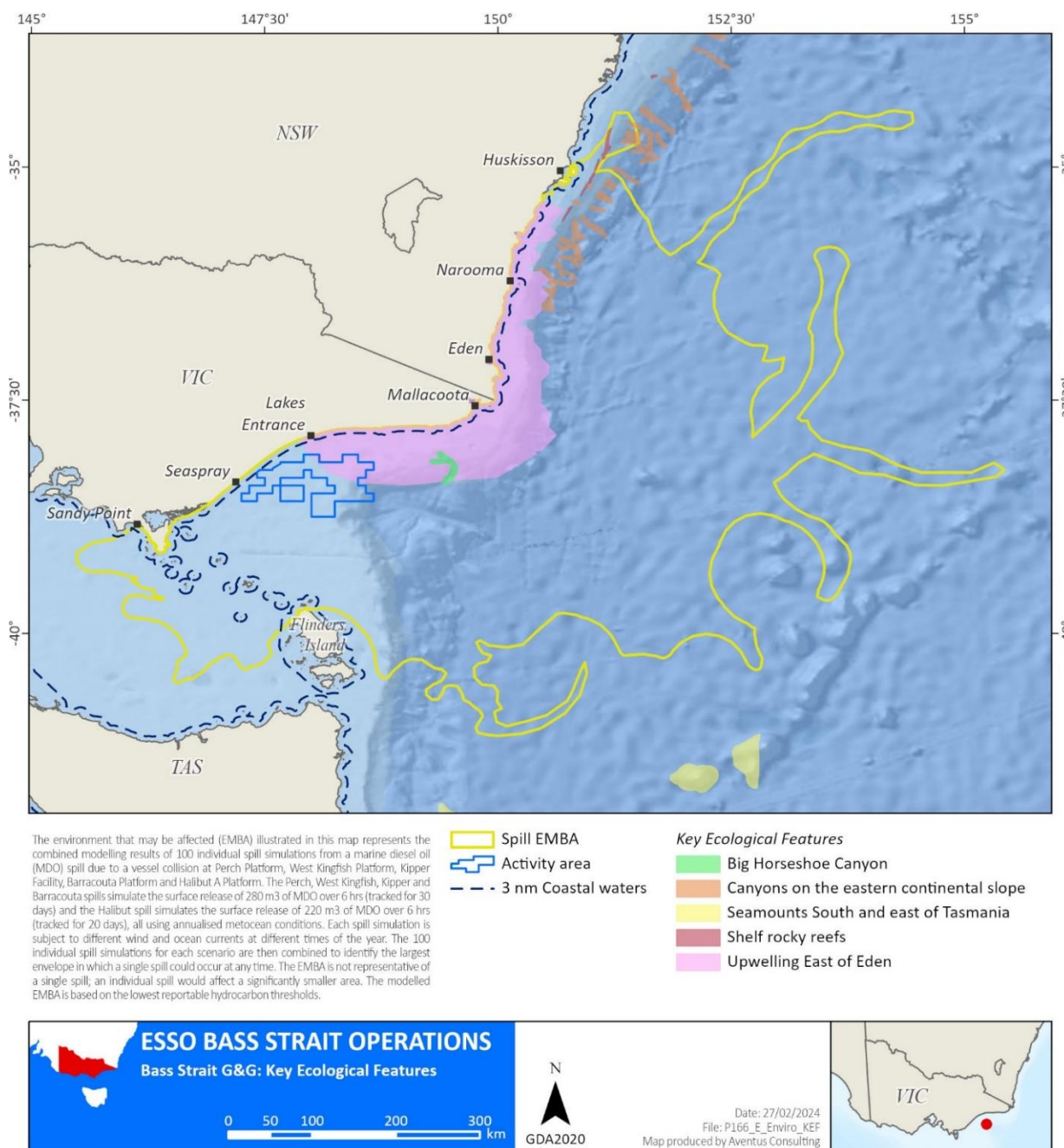


Figure 1-7 KEFs within the EMBA

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 1-8, Figure 1-9 and Figure 1-10.

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 1-8)	
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 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>
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>
Corner Inlet Marine National Park	<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>
Ninety Mile Beach Marine National Park	<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>

Name	Description
Nooramunga Marine and Coastal Park	<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>
Point Hicks Marine National Park	<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>
Wilsons Promontory Marine National Park	<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>
Tasmania (see Figure 1-9)	
Kent Group National Park	<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</p>

Name	Description
	<p>Marine Reserve, 2017). 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). 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 prion, common diving petrel, Pacific gull and sooty oystercatcher (Brothers, 2001).</p>
New South Wales (see Figure 1-10)	
Batemans Marine Park	<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, 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>
Jervis Bay Marine Park	<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, zoanthids, 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
Booderee	Booderee National Park stretches across 6,379 ha at Jervis Bay on the south coast of NSW. The park includes 875 ha of marine environment. The marine environment of Booderee is excellent representation of largely pristine marine environments of the southeastern temperate region of southeast Australia and is characterised by a wide range of tidal and subtidal habitats. These include shallow rock reefs and sand zones, seagrass meadows, deeper silty sand flats and deep water rocky reefs, cliffs, platforms, blocks, boulders and caves (DCCEEW, 2024).

1.1.9.2 Coastal Protected Areas

This section lists the coastal protected areas that are within the EMBA.

- Victoria (see Figure 1-8):
 - 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
 - **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
 - 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 Wilderness Zone
- Wilsons Promontory Islands Remote and Natural Area
- Tasmania (see Figure 1-9):
 - Bass Pyramid Nature Reserve
 - Blyth Point 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.
 - **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, Small Bass Strait Island Reserves Draft Management Plan, 2000).
 - **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.
 - Jacksons Cove Conservation Area
 - Low Point Conservation Area
 - Mount Tanner Nature Recreation Area
 - North East Islet Nature Reserve
 - North East River Game Reserve
 - Palana Beach Nature Recreation Area
 - Rodondo Island Nature Reserve
 - Sentinel Island Conservation Area
 - Sister Islands Conservation Area
 - Sugarloaf Rock Conservation Area
 - **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).
 - Wright Rock Nature Reserve
- New South Wales (see Figure 1-10):
 - Belowla Island Nature Reserve
 - Ben Boyd National Park

- Biamanga National Park
- **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).
- **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
- **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).
- Jervis Bay National Park
- **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.
- **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.
- Nadgee Nature Reserve

- Tollgate Islands Nature Reserve

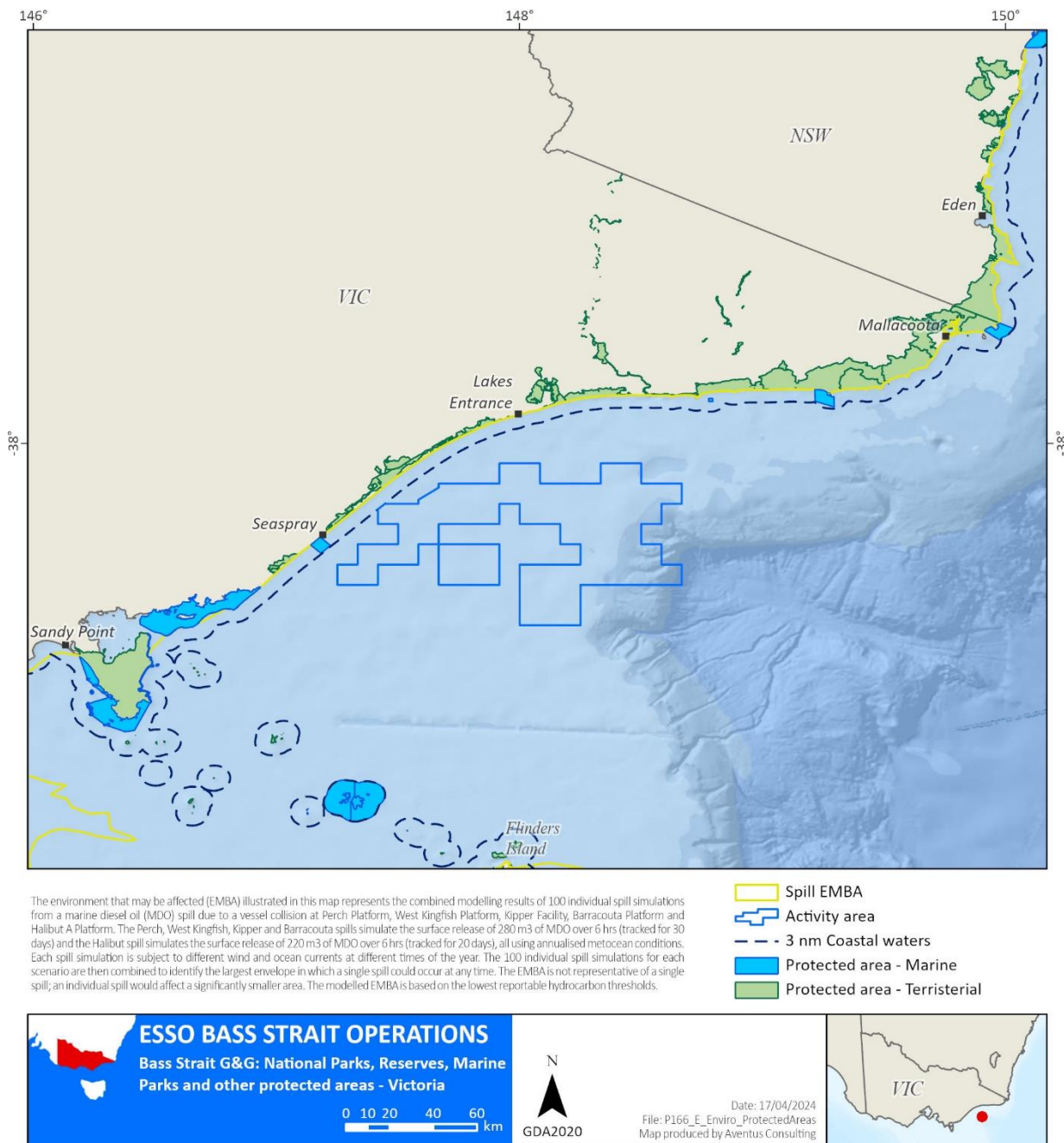


Figure 1-8 Victorian protected areas intersected by the EMBA

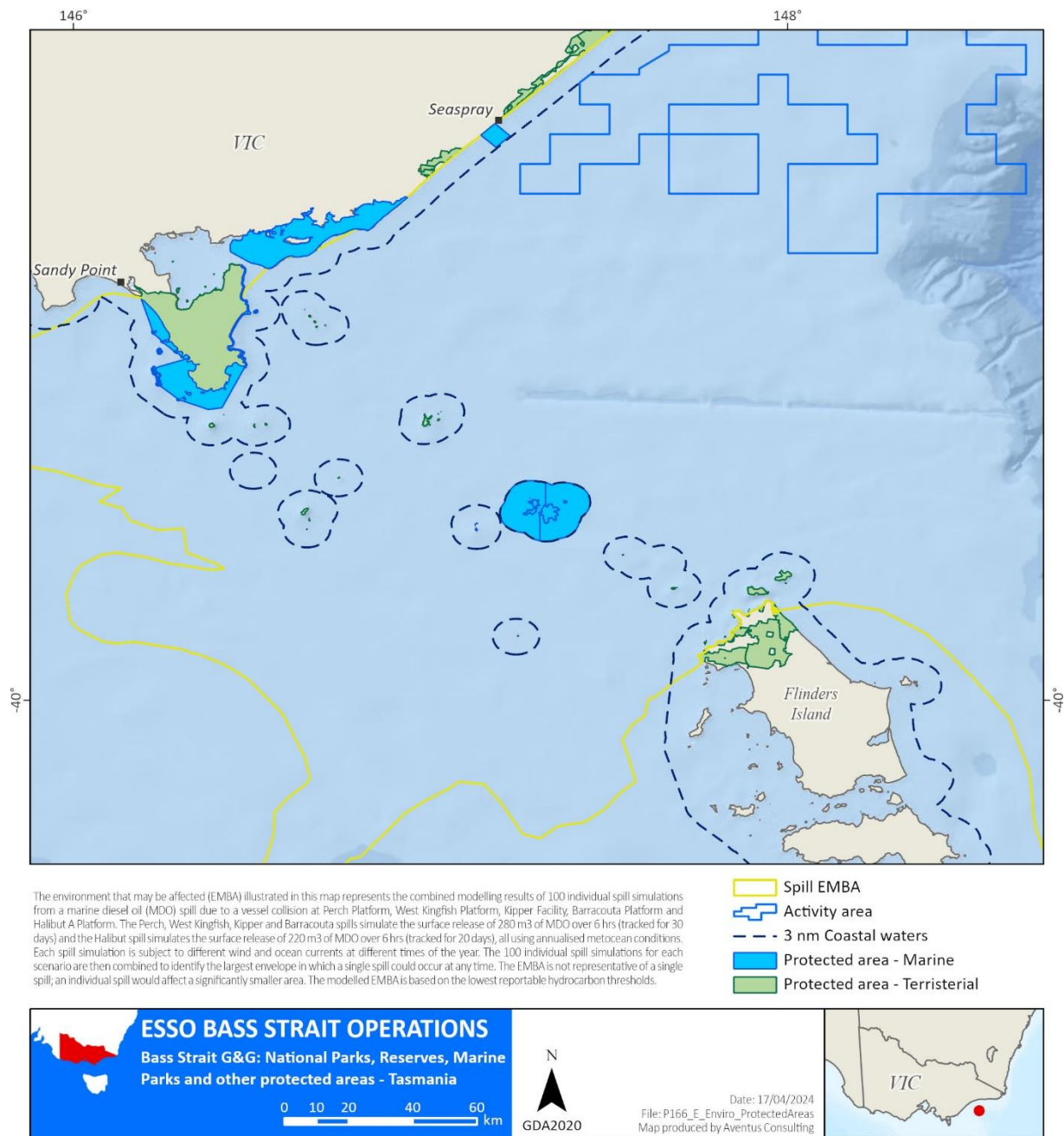


Figure 1-9 Tasmanian protected areas intersected by the EMBA

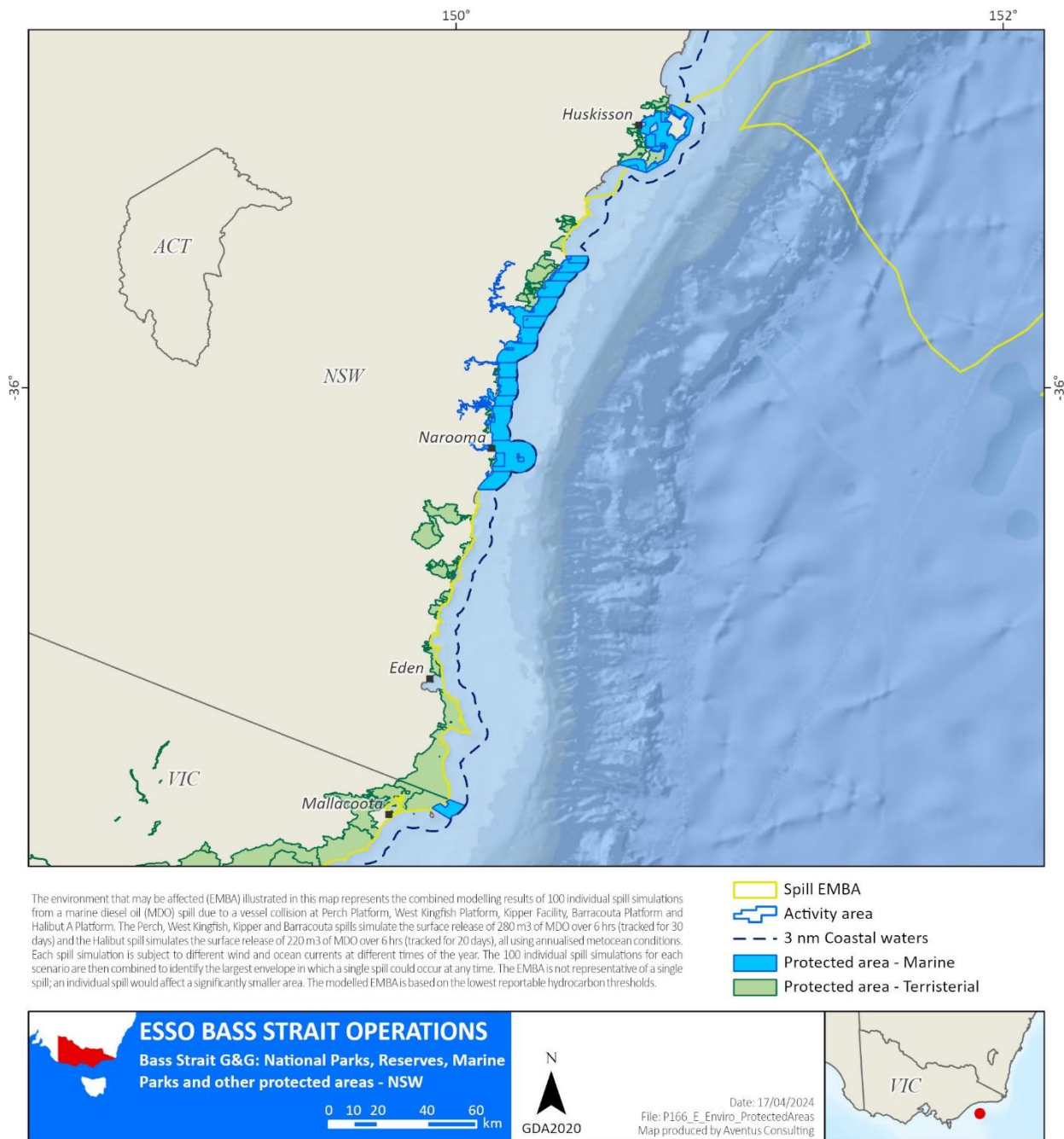


Figure 1-10 NSW protected areas intersected by the EMBA

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 gull
- 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 1-18):

- Bass Strait Shelf Province
- Central Eastern Province
- Central Eastern Shelf Province
- Southeast Shelf Transition
- Southeast Transition

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, Metocean Design Criteria for Bass Strait fixed platforms. Vols. 1 – 4, Esso Australia Ltd. , 1989) and (Cardno, 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 1-12 and Figure 1-13). 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.

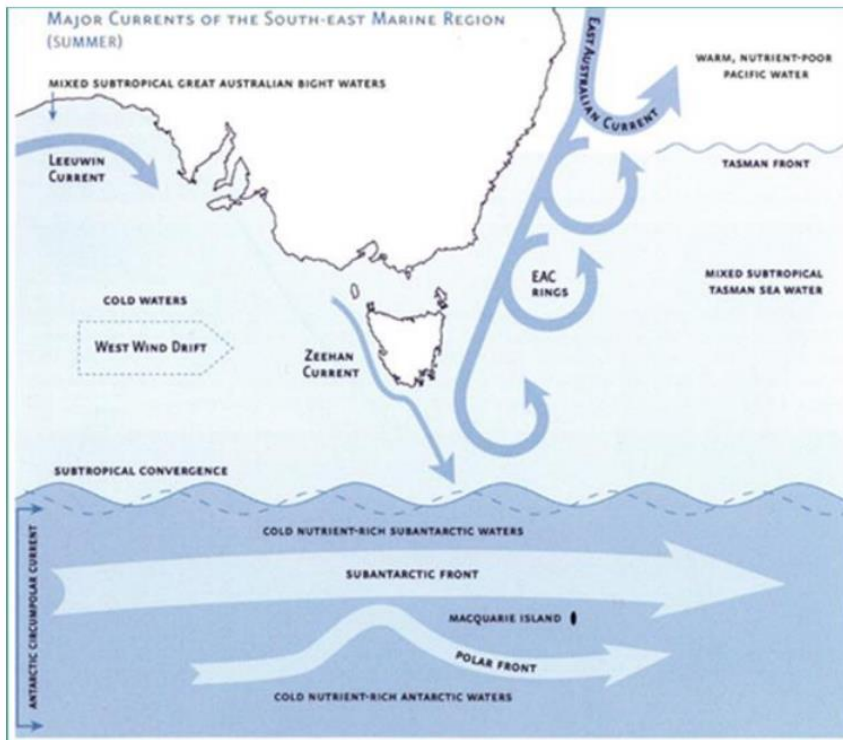


Figure 1-11 Major ocean currents in south-eastern Australian waters summer

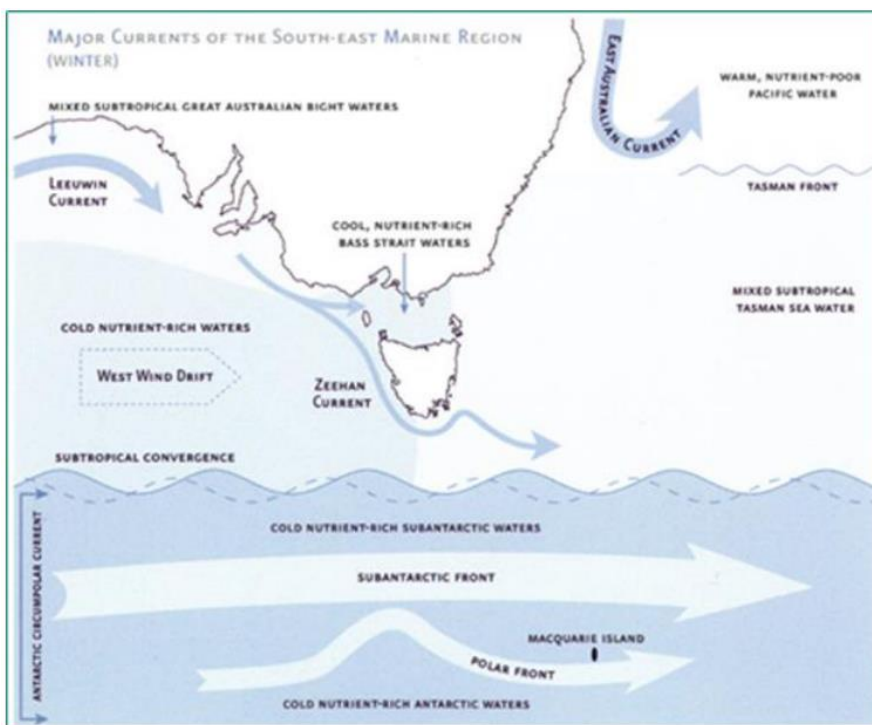


Figure 1-12 Major ocean currents in south-eastern Australian waters winter

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, Metocean Design Criteria for Bass Strait fixed platforms. Vols. 1 – 4, Esso Australia Ltd., 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 1-13). The bathymetry contours along the coast where the EMBA lies ranges from 10 - 300 m deep.

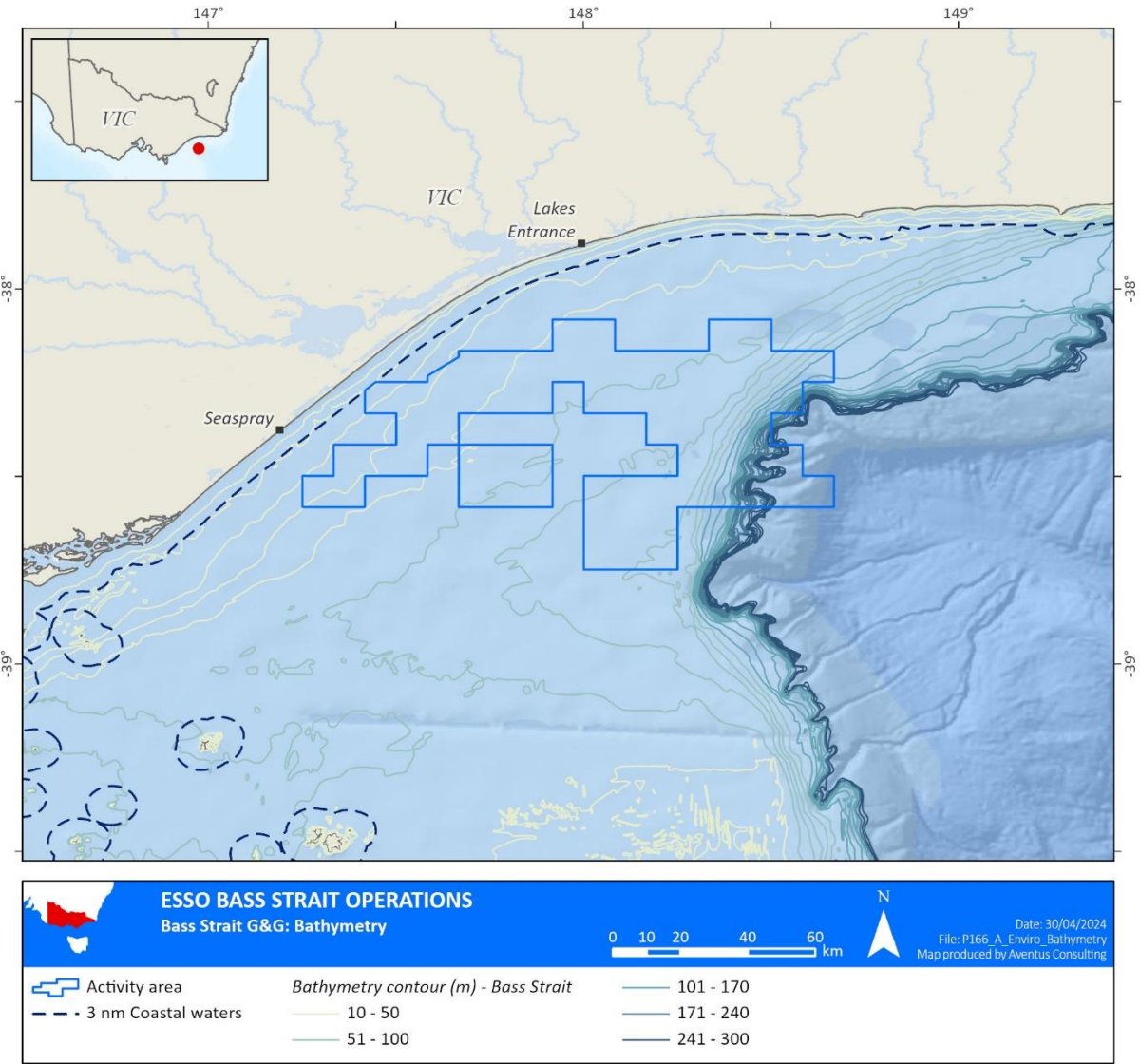


Figure 1-13 Bathymetry within the EMBA

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 of 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, nemerteans, 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) *Platydorid 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 1-14 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 1-15 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 1-16 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 2.3 L. 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 deltoids*), 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.

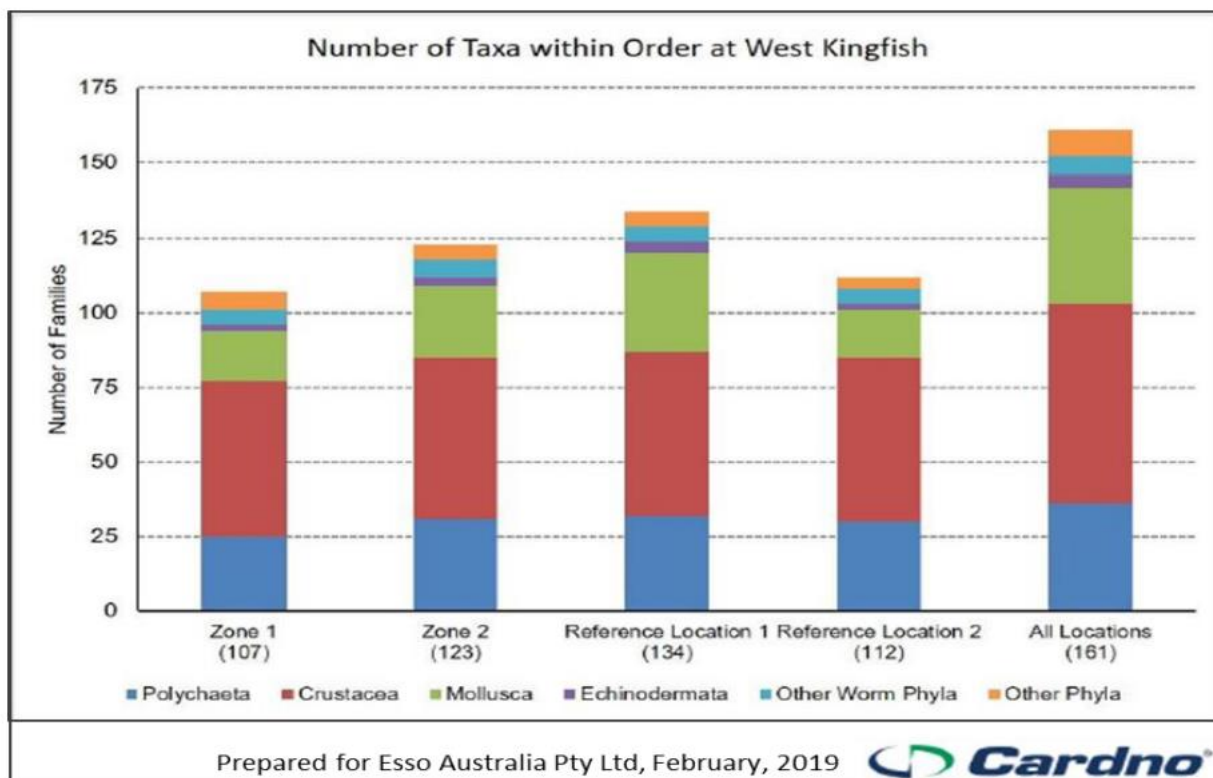


Figure 1-14 Number of taxa sampled at West Kingfish platform (Zones 1 and 2) and reference locations (Locations 1 and 2). Values in parentheses indicate the total number of taxa sampled

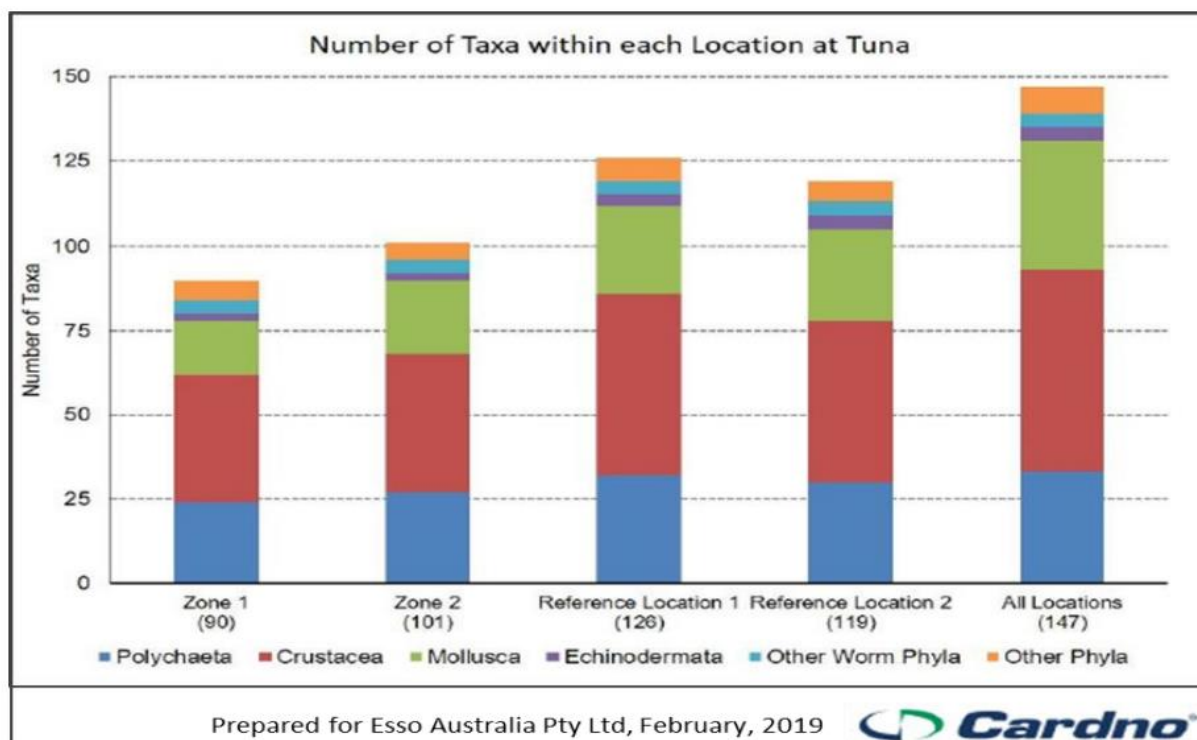


Figure 1-15 Number of taxa sampled at Tuna platform (Zones 1 and 2) and reference locations (Locations 1 and 2). Values in parentheses indicate the total number of taxa sampled

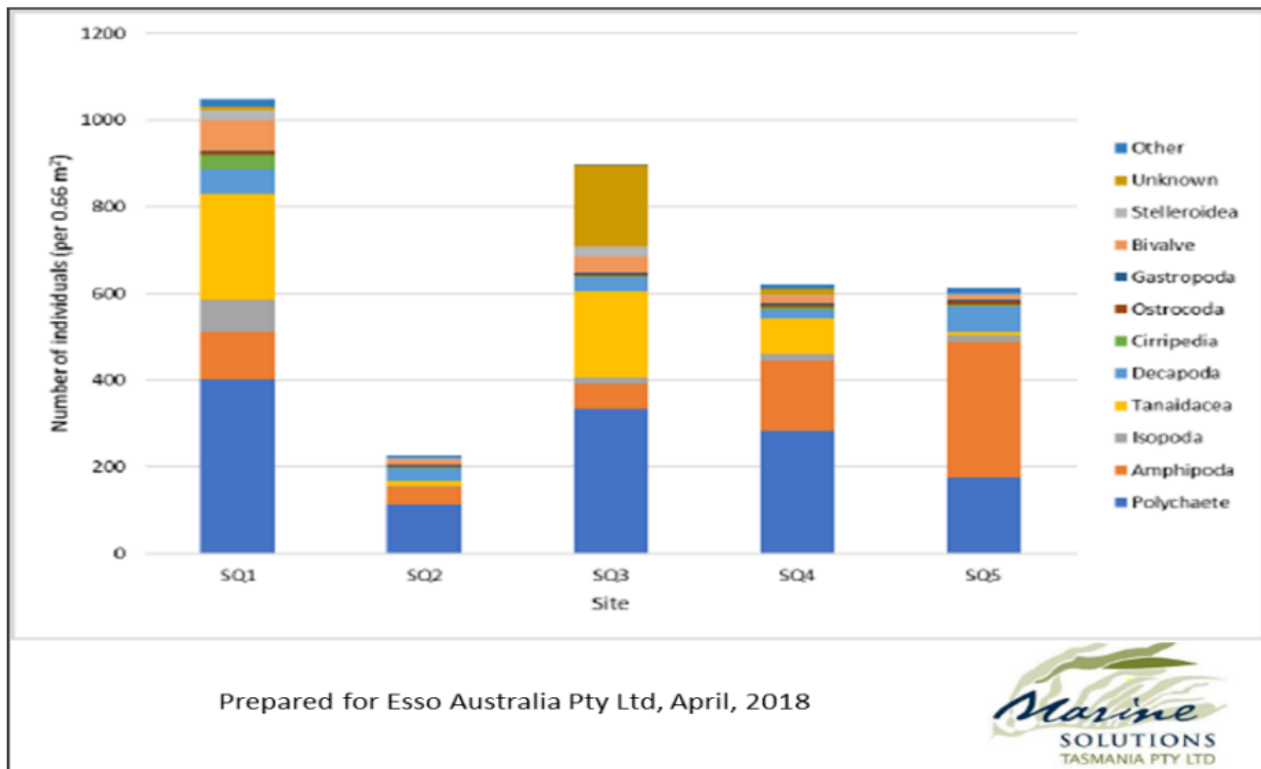


Figure 1-16 Taxa classed abundance of infauna at West Barracouta monitoring

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 (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 1-17 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).

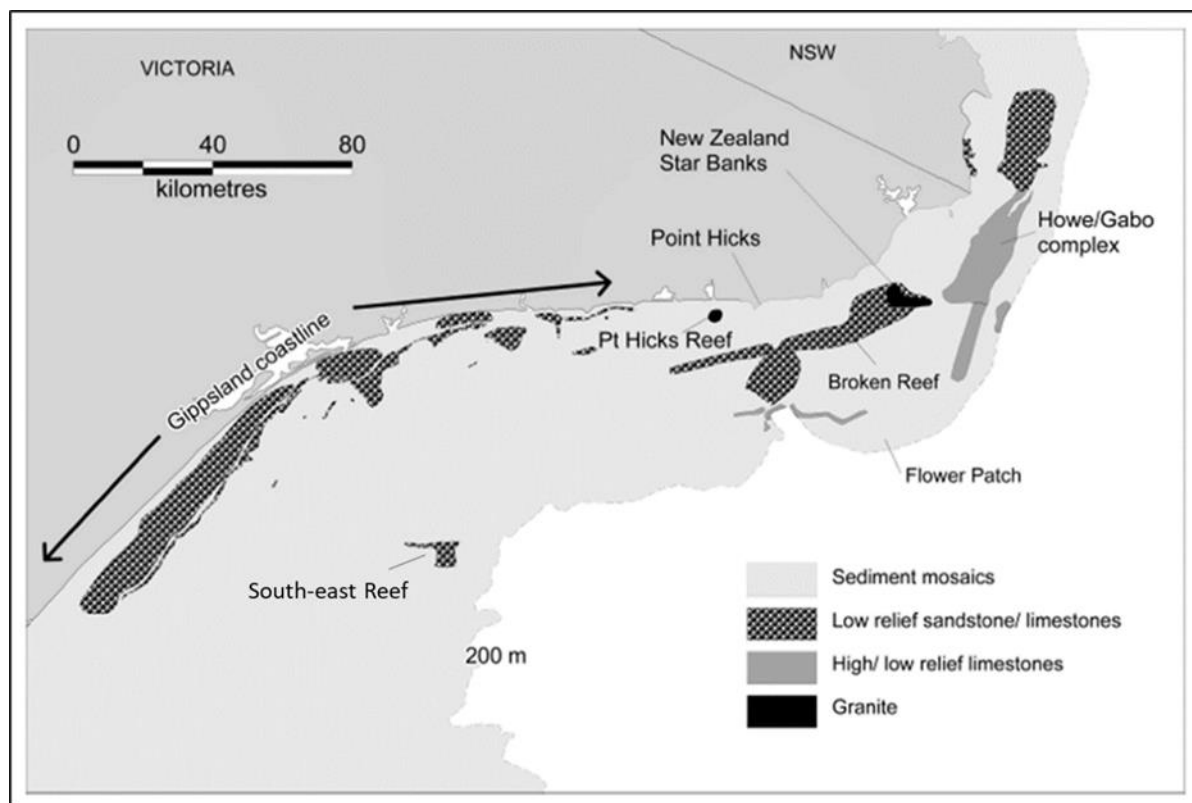


Figure 1-17 Substrata on the south-eastern Australian continental shelf

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.

CAULIFLOWER SOFT CORAL

The PMST report (see Appendix D) identified one species of coral that may occur within the EMBA, the cauliflower soft coral (*Dendronephthya australis*) see table B-7 in Appendix B. This species of coral is endemic to eastern Australia and is listed as endangered. The species is predominantly found in estuarine environments in NSW where it occurs at depths between 1–15 m, although, it occasionally occurs offshore to depths of 30 m (NSW DPI, 2021).

Cauliflower soft coral usually grows to 20–30 cm tall but it can reach heights of up to 1 m. It is usually a bright reddish pink colour and forms branched or bushy colonies with the branching stems supporting densely placed polyps. The species provides habitat for a variety of fish and invertebrates, including the endangered White seahorse (*Hippocampus whitei*) and juvenile snapper (TSSC, 2020).

The only estuaries where cauliflower soft coral is known to grow in abundance are Port Stephens and the Brisbane Water area of Hawksbury River, NSW (outside of the EMBA). They have been found sporadically in other locations in NSW waters including, Sydney Harbour, Terrigal, Botany Bay and Jervis Bay, however their persistence in these areas is uncertain (NSW DPI, 2021).

The primary cause for the decline in abundance of Cauliflower Soft Coral is from damage to its natural habitat (NSW DPI, 2021).

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 Mesoscale Bioregions

Based on the IMCRA Version 4.0 (CoA, 2006), the EMBA is situated within the following mesoscale bioregions (Figure 1-19):

- Batemans Shelf
- Central Bass Strait
- Central Victoria
- Flinders
- Hawkesbury Shelf
- Twofold Shelf
- Victorian Embayments

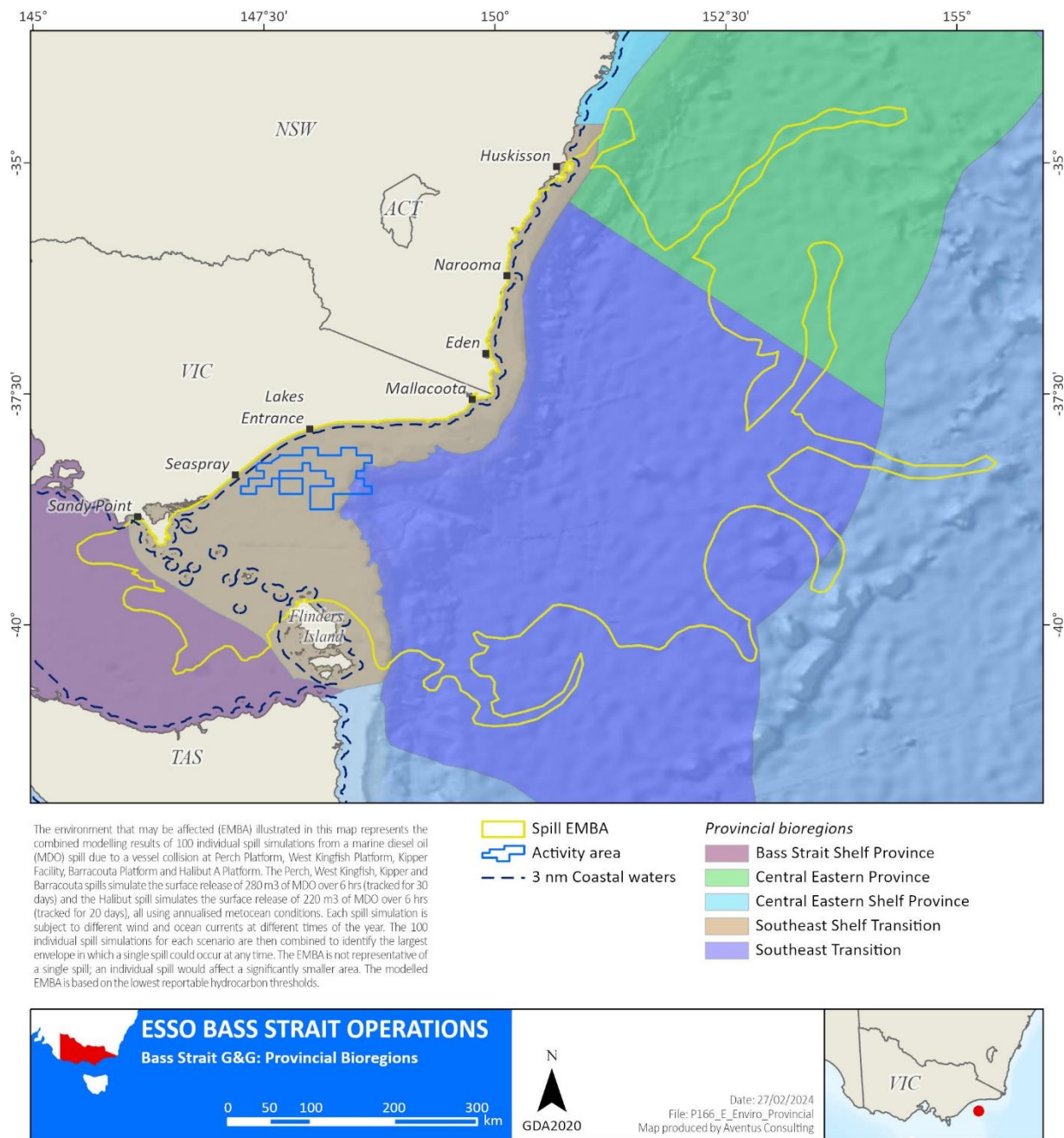


Figure 1-18 Provincial Bioregions within the EMBA

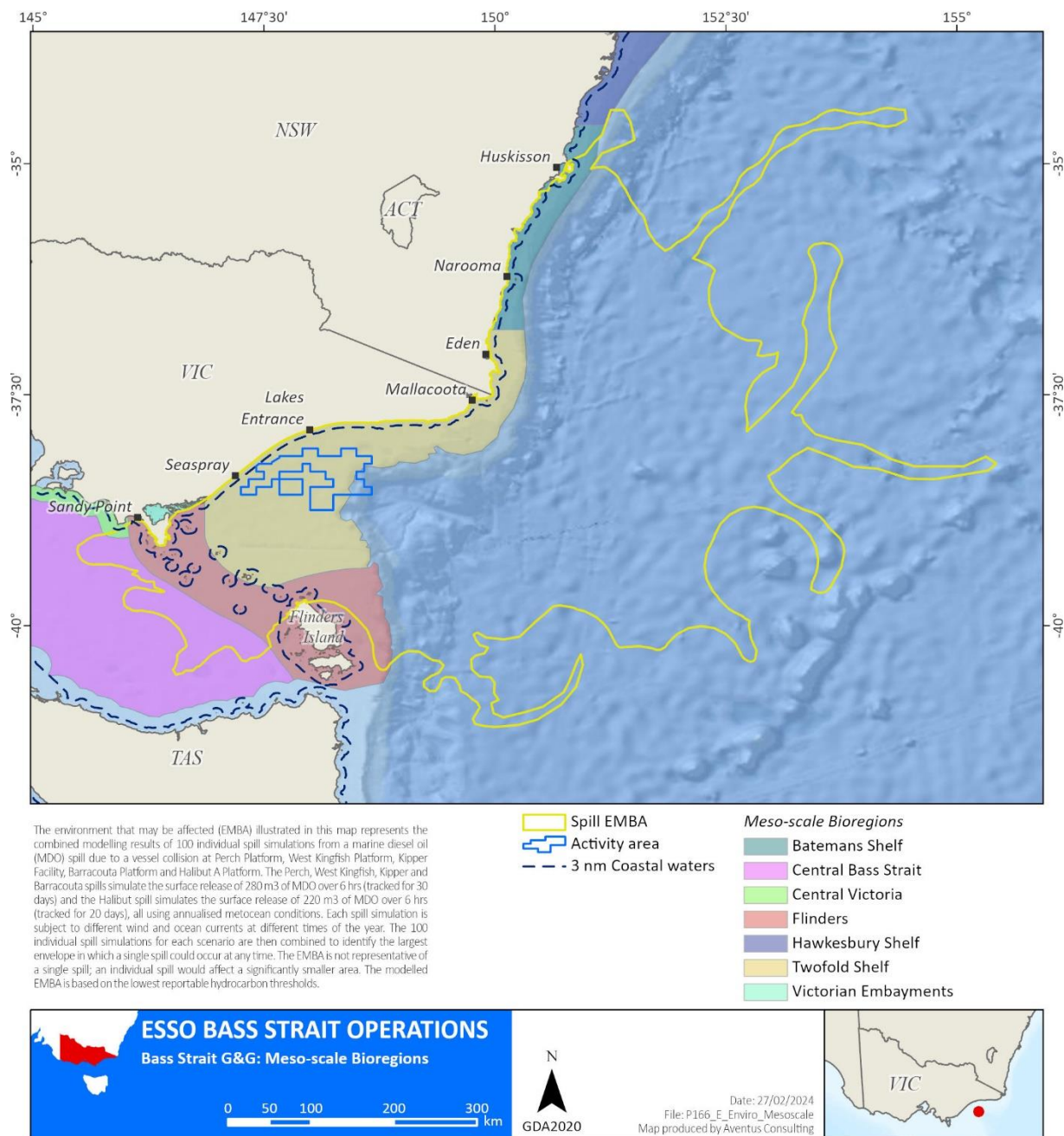


Figure 1-19 Mesoscale Bioregions within the EMBA

1.4.3 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.

1.4.3.1 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 all day apart from 10.30 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 (Wilsons Promontory, Victoria). Bondi Beach is the most notorious sandy beach in Australia.

1.4.3.2 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., Wilsons 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).

1.4.3.3 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).

1.4.3.4 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.

1.4.3.5 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).

1.4.3.6 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 Barracoota, 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).

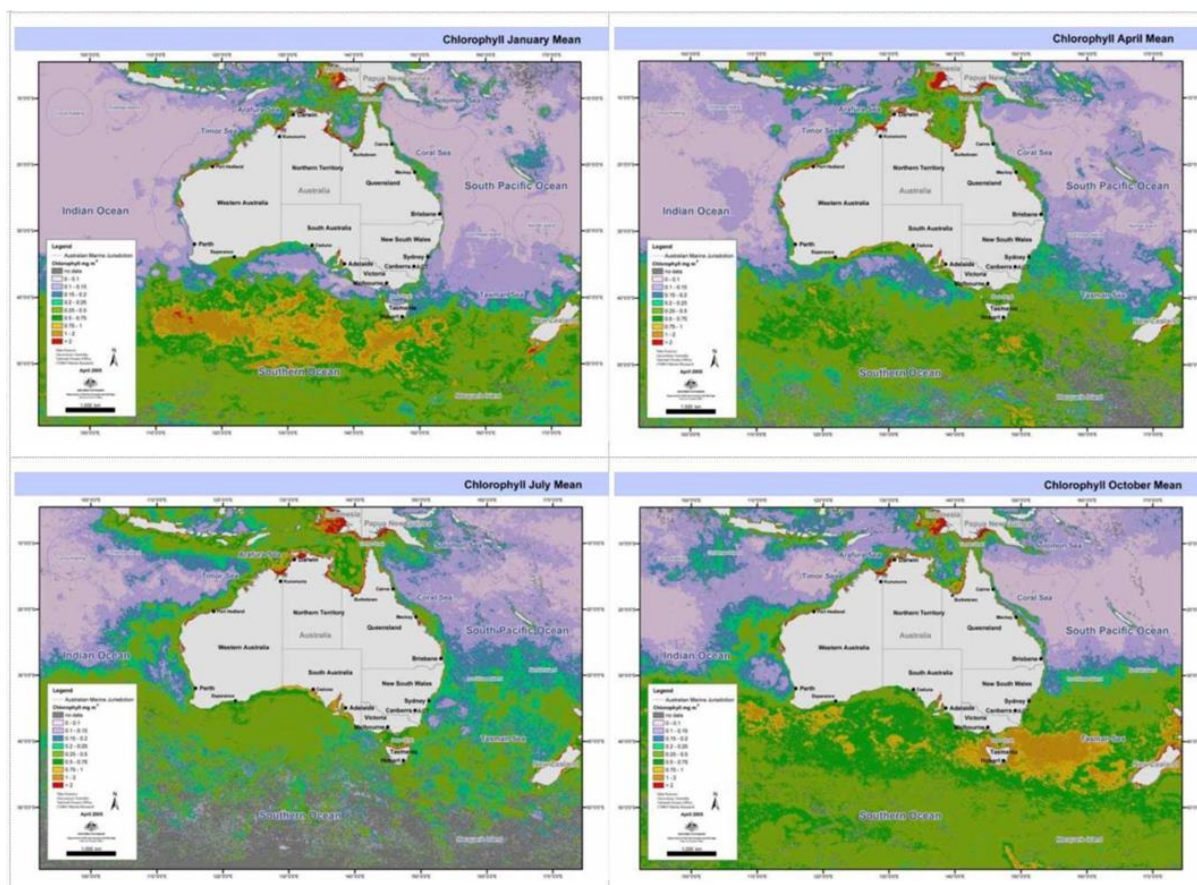
1.4.4 Plankton

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 1-20).

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).



the Elizabeth and Middleton Reefs Marine National Nature Reserve (within the EMBA) which supports an abundant population of black cod (DSEWPC, 2012b).

1.4.5.2 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.

1.4.5.3 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.

1.4.5.4 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.

1.4.5.5 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.

1.4.5.6 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.

1.4.5.7 Blue warehou

The Blue warehou (*Seriola lalandi*) is listed as conservation dependent under the EPBC Act. Blue warehou (*Seriola lalandi*) is a benthic-pelagic 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.

1.4.5.8 Grey nurse shark (east coast population)

The grey nurse shark (*Carcharias 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 BIA for their migration and foraging which is intercepted by the EMBA and shown in Figure 1-21.

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 migration and foraging BIA within the coastal waters of NSW (Figure 1-21). Given the current distribution of the grey nurse shark and the known breeding sites, the species may occur within the EMBA.

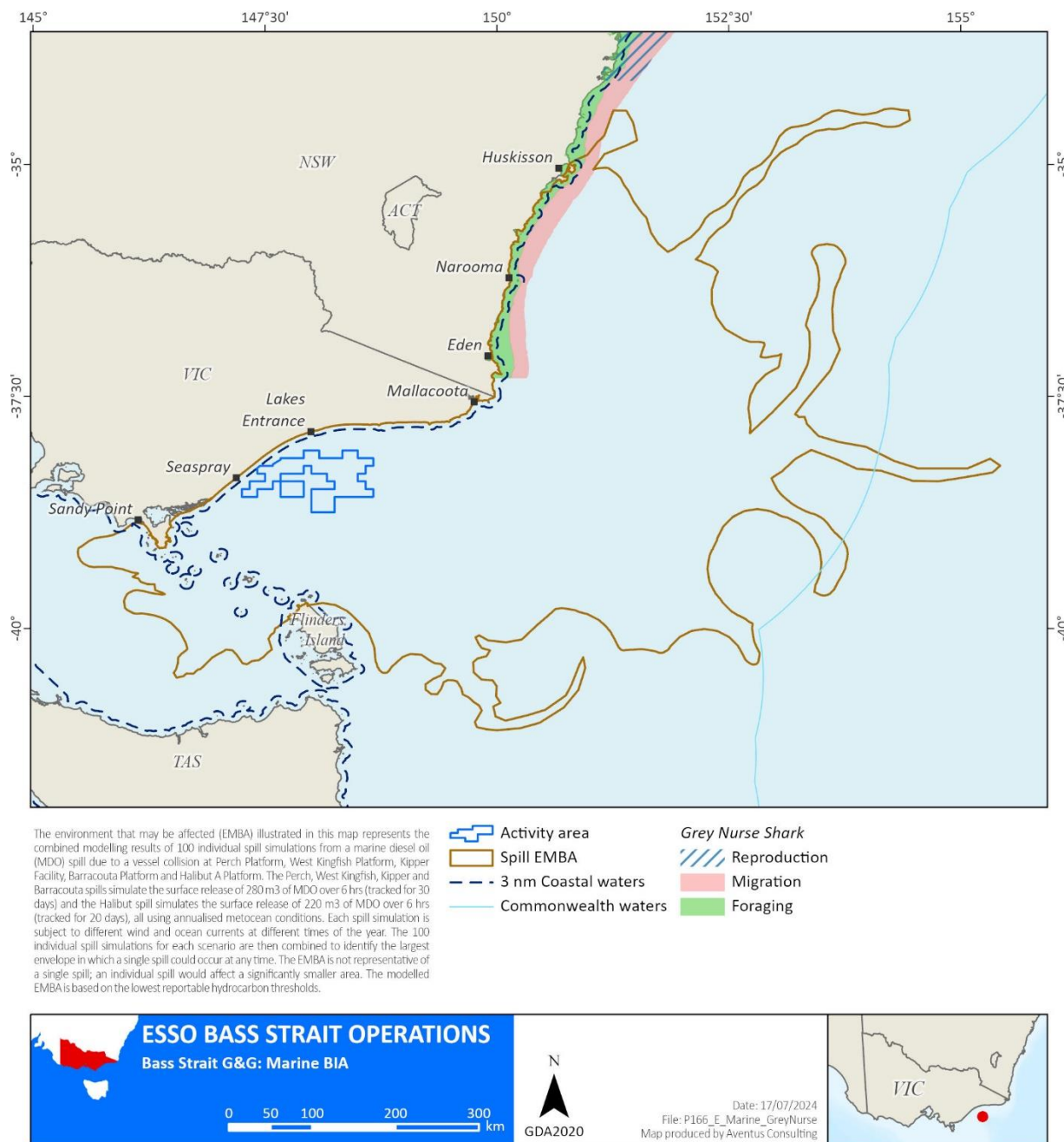


Figure 1-21 Grey nurse shark BIAs intersected by the EMBA

1.4.5.9 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 1-22 (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 1-22). (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.

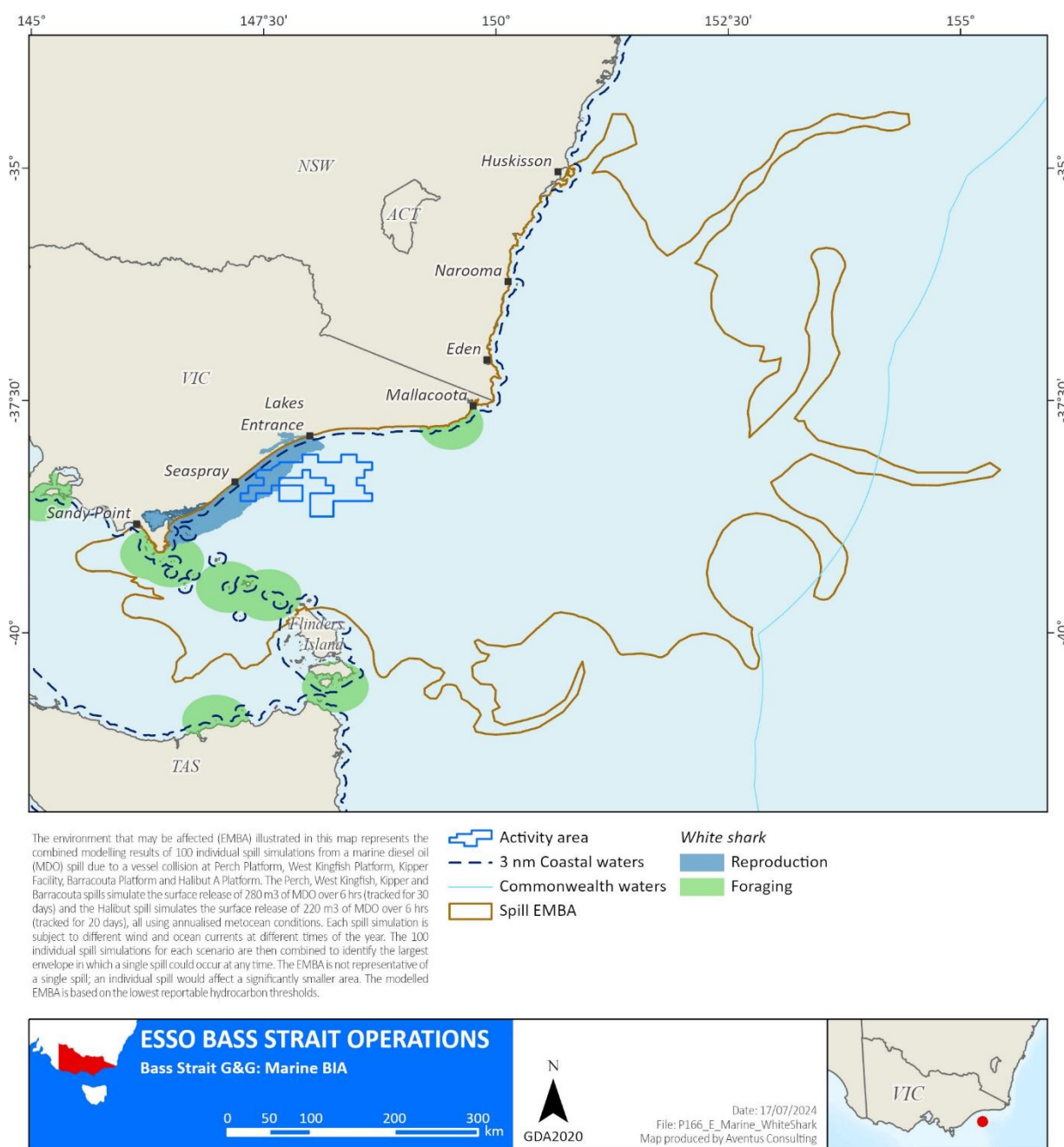


Figure 1-22 Great white shark BIAs intersected by the EMBA

1.4.5.10 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.

1.4.5.11 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 preference indicates that it is likely to occur in the EMBA.

1.4.5.12 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 Western Australia, 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.

1.4.5.13 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 Western Australia. Due to the species distribution, the scalloped hammerhead may be encountered within the area of the EMBA that extends up to Sydney.

1.4.5.14 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.

1.4.6 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 27 whale, and 10 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.

1.4.6.1 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, Mikhaliyev, 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.

The Australian population of SRW is divided into two sub-populations due to genetic diversity (Carroll, et al., 2011); (Baker, Patenaude, Bannister, Robins, & Kato, 1999) and different rates of increase (DSEWPC, 2012e). The western sub-population occurs predominantly between Cape Leeuwin, Western Australia (WA) and Ceduna, South Australia (SA). 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 can be found along the south-eastern coast, including the region from Tasmania to Sydney, with key aggregation areas in Portland and Warrnambool in Victoria. The eastern sub-population is estimated at less than 300 individuals and is showing no signs of increase (Bannister J. , 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).

Southern right whales (SRWs) generally occur along the southern coast of Australia; they migrate annually along the eastern coastline from high latitude feeding grounds to lower latitudes for calving between mid-May and October (DCCEEW, 2023e). Known calving and aggregation grounds in the south-east region are Warrnambool, Port Fairy, Port Campbell and Portland in Victoria, and Encounter Bay in SA (DSEWPC, 2012d). 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

In mid-2023, the National Conservation Atlas (NCVA) updated the BIA data for the SRW, which now identifies two BIAs; reproduction (May – September) and migration (April – October), both of which are overlapped by the EMBA (Figure 1-23). 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. Migration for the SRW 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 (DCCEEW, 2023f) category definitions, 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. 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 which contribute to connectivity with other functionally important areas (DCCEEW, 2023f). The EMBA overlaps with 4.78 % of the migration BIA and 6.38 % of the reproduction BIA (Figure 1-23).

Southern right whales are likely to be encountered within the EMBA.

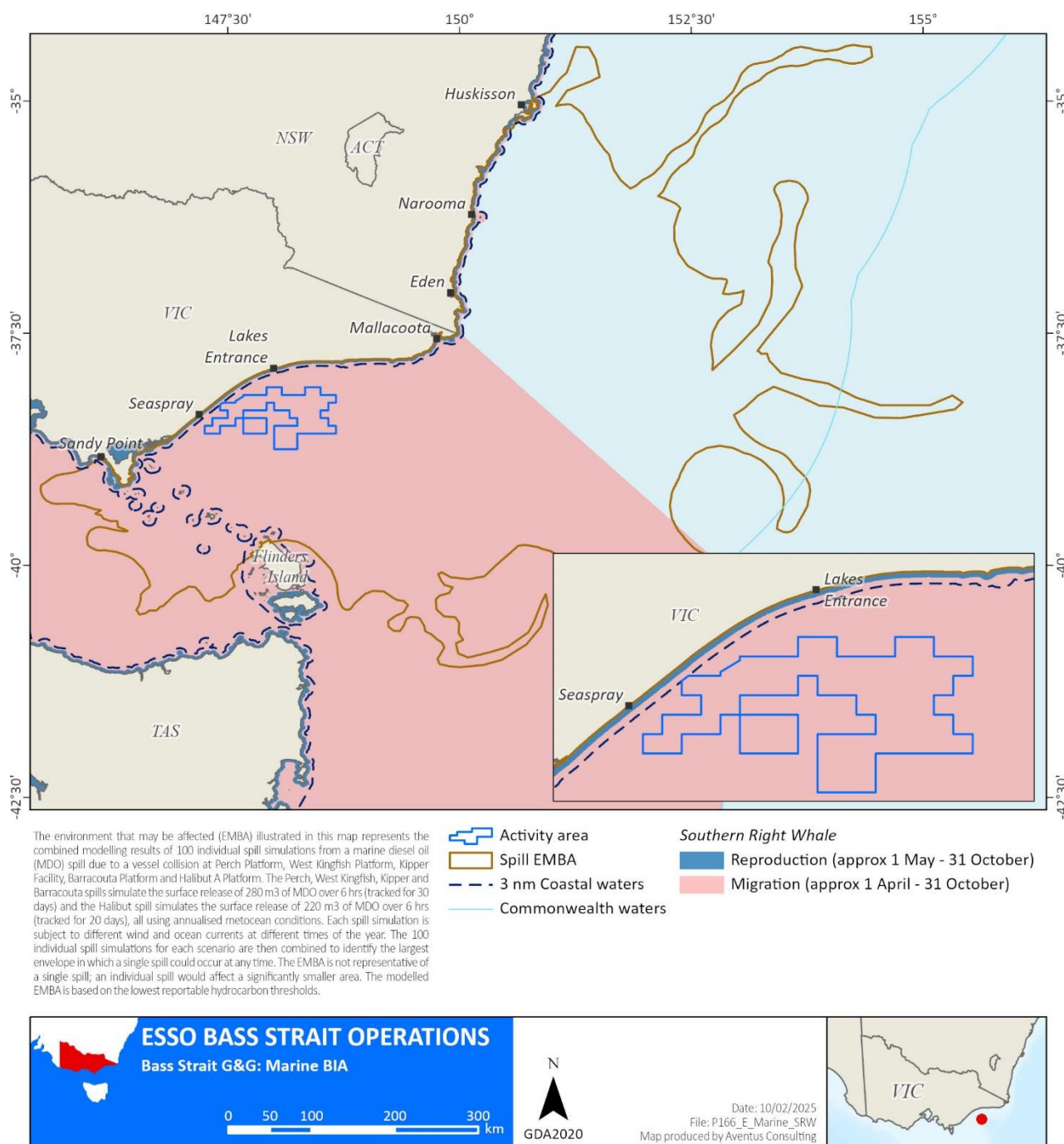


Figure 1-23 SRW BIAs intersected by the EMBA

1.4.6.2 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. brevicauda*) (Rice 1998, in (Department of the Environment, 2023)). The Pygmy blue whale has five population groups, two of which are found in the Southern Hemisphere. Figure 1-24 summarises the known and predicted ranges of the species and populations around Australia and NZ.

Long term passive acoustic recorders found Antarctic blue whale calls along the entire southern Australian coast, while calls from the New Zealand pygmy blue whale population occur predominantly eastward of Bass Strait, and calls from the Indo-Australian pygmy blue whale population were heard west of Bass Strait (McCauley, Gavrilov,

Jolliffe, Ward, & Gill, 2018). The Indo-Australian pygmy blue whale population wasn't recorded on the east Australian coast or east of Bass Strait and the New Zealand pygmy blue whale population was always heard in the Bass Strait recordings, and only ever heard as far west as Portland. The Antarctic blue whale was recorded at all sites south of 19°S (McCauley, Gavrilov, Jolliffe, Ward, & Gill, 2018).

Balcazar et al. (2015) suggests that the Australian continent acts as a geographic boundary, separating Indo-Australian and New Zealand pygmy blue whale acoustic populations at the junction of the Indian and Pacific Ocean basins (Balcazar, et al., 2015). The distribution of pygmy blue whales in the Australian region is shown in Figure 1-25. 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 below.

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 pygmy blue whales have been recorded: the Bonney Coast Upwelling KEF and adjacent waters off South Australia and Victoria; and the Perth Canyon KEF and adjacent waters off Western Australia. 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 (CoA, 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.

Simplified guide to blue whale presence in Australia

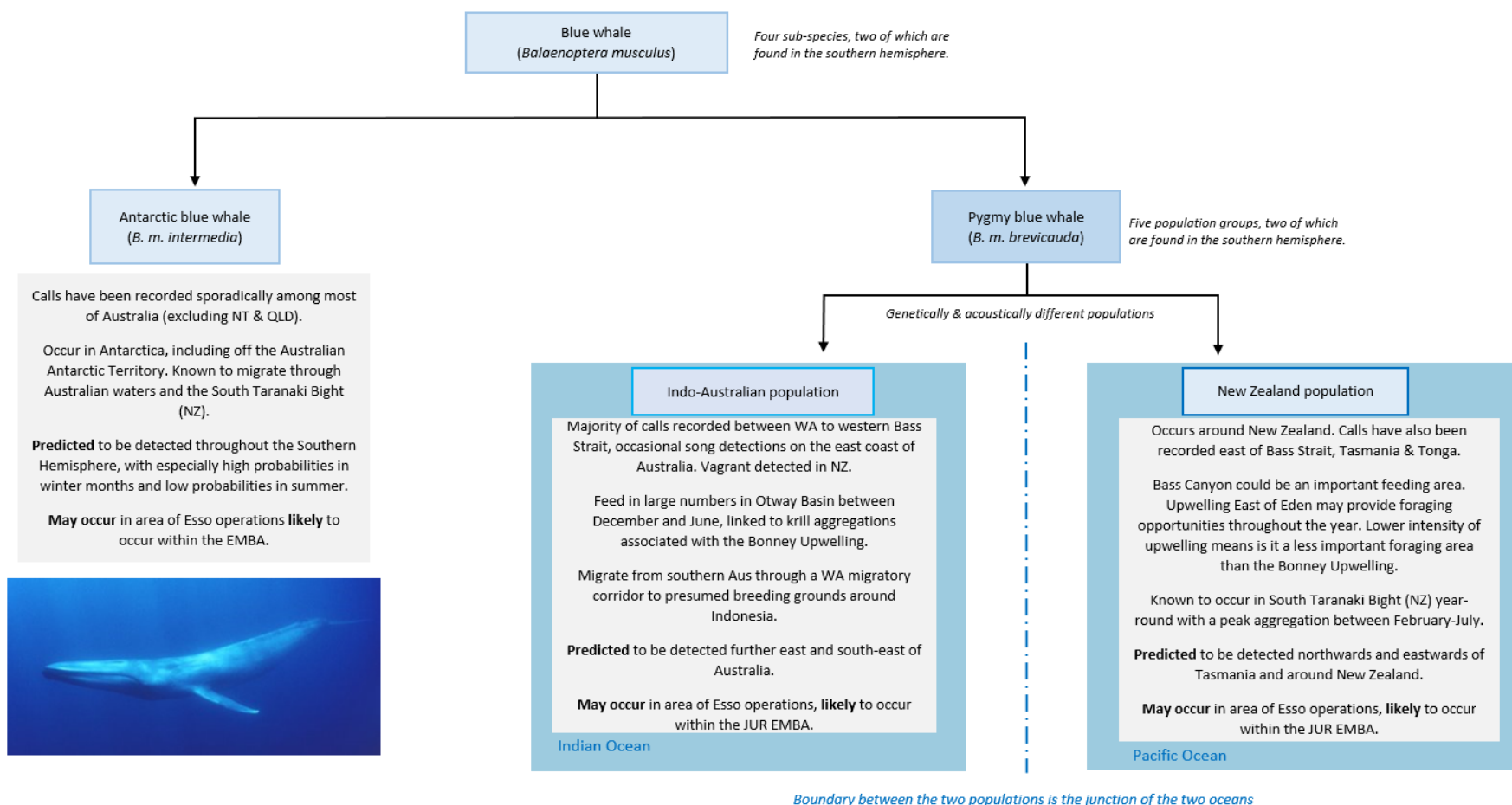


Figure 1-24 Simplified guide to blue whale presence in Australia

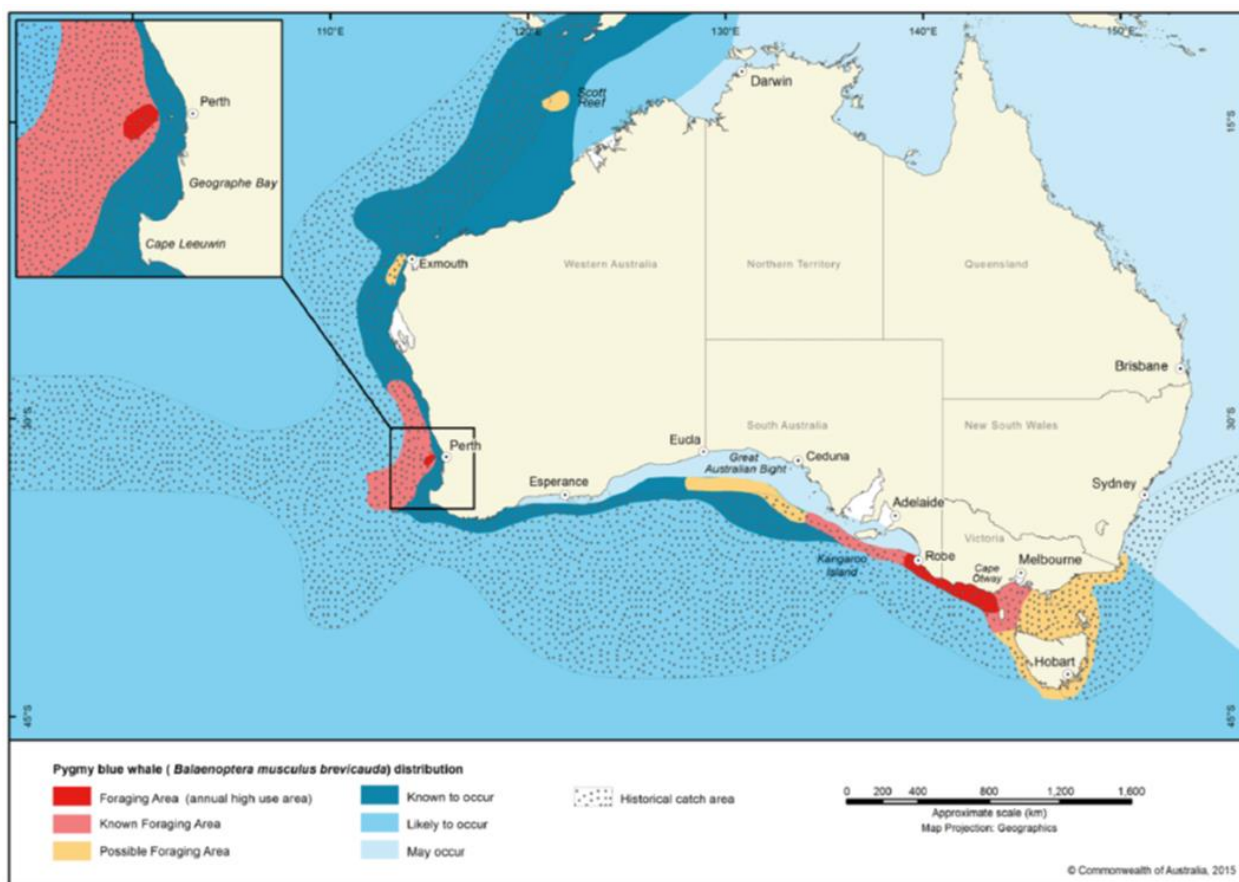


Figure 1-25 Distribution and foraging areas for the PBW (DoE, 2015b)

INDO-AUSTRALIAN PYGMY BLUE WHALE

The distribution and migration patterns of Indo-Australian pygmy blue whale are relatively well understood in areas further west of the EMBA. Satellite tagging of Indo-Australian pygmy blue whales 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 foraging BIA for the pygmy blue whale is overlapped by the EMBA (Figure 1-26). These areas form the eastern extent of the Bonney Upwelling (extending from Robe, South Australia 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 & 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, et al., 2011) (McCauley, Gavrilov, Jolliffe, Ward, & Gill, 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.

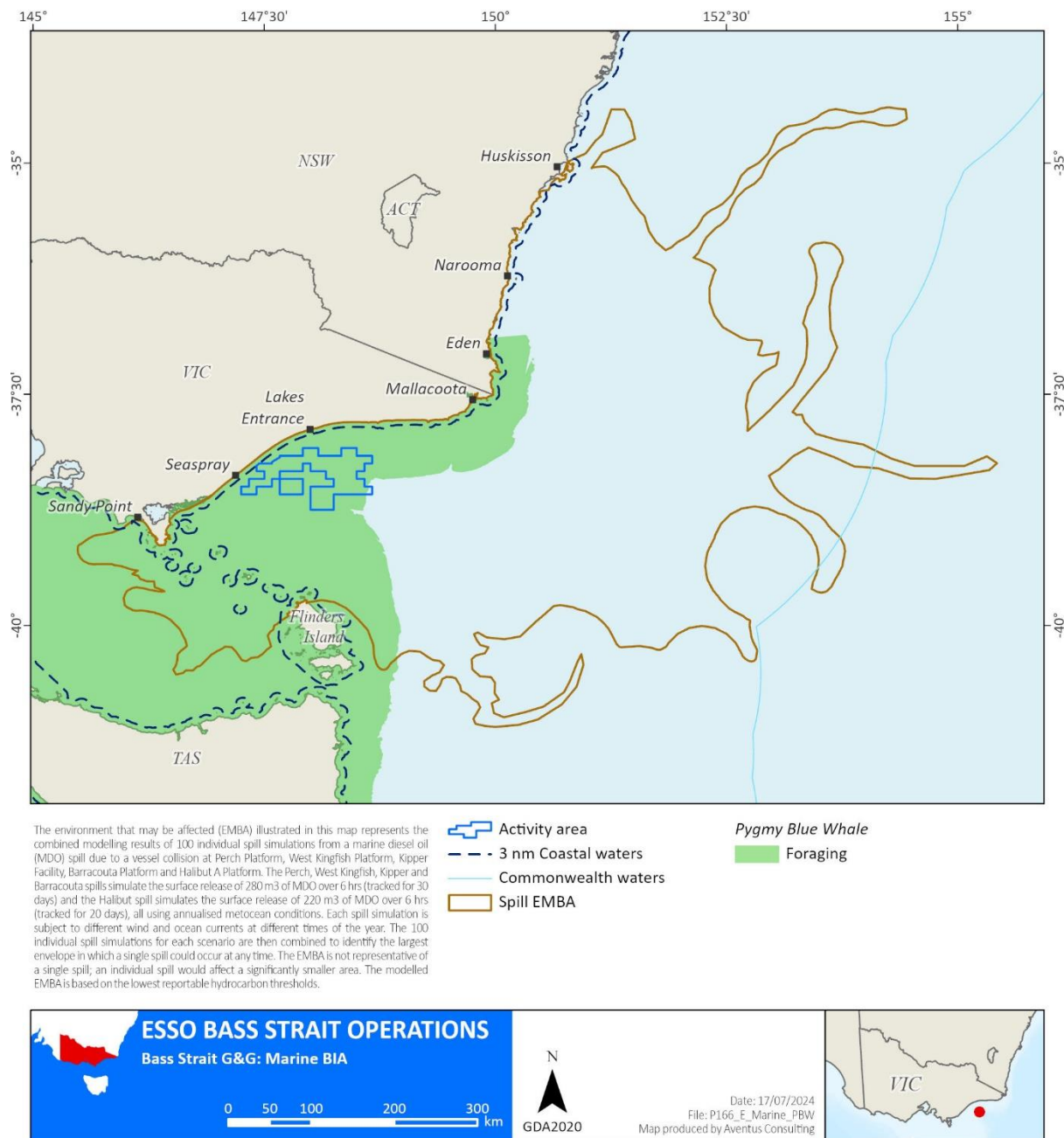


Figure 1-26 PBW BIAs intersected by the EMBA

NEW ZEALAND PYGMY BLUE WHALE

Relatively little is known about New Zealand pygmy blue whales. Antarctic blue whales are known to co-occur with pygmy blue whales around New Zealand. Antarctic blue whale detections peaked during austral winter and spring, indicating that New Zealand, 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, McPherson, Giorli, Goetz, & Radford, 2021).

the Upwelling East of Eden KEF is located within the EMBA and is 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), centred on the Eden upwelling, has a less distinct seasonal pattern (Figure 1-27) (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 will be present within the EMBA.

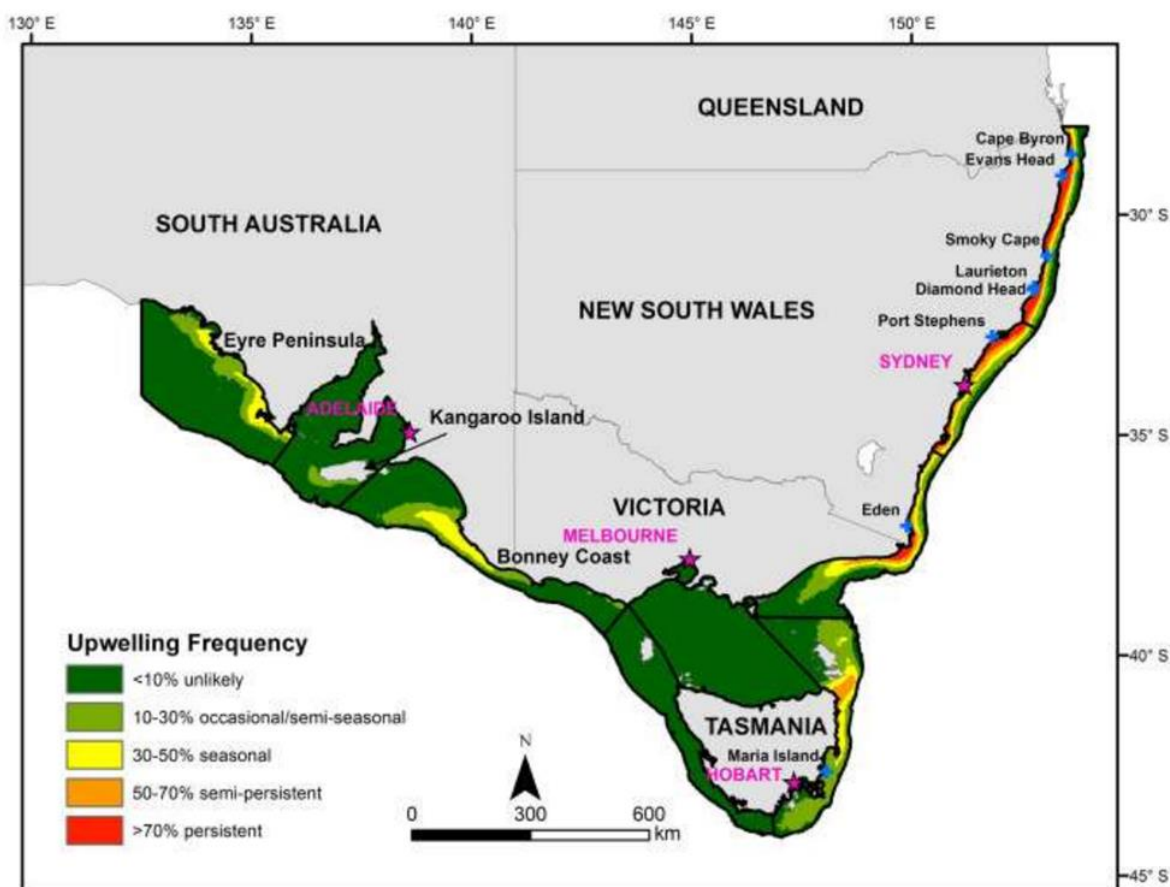


Figure 1-27 Upwelling frequency (Huang & Hua Wang, 2019)

1.4.6.3 Humpback whale

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 1-28). 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 exists along the NSW coast, which is overlapped by the EMBA (Figure 1-29). 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).

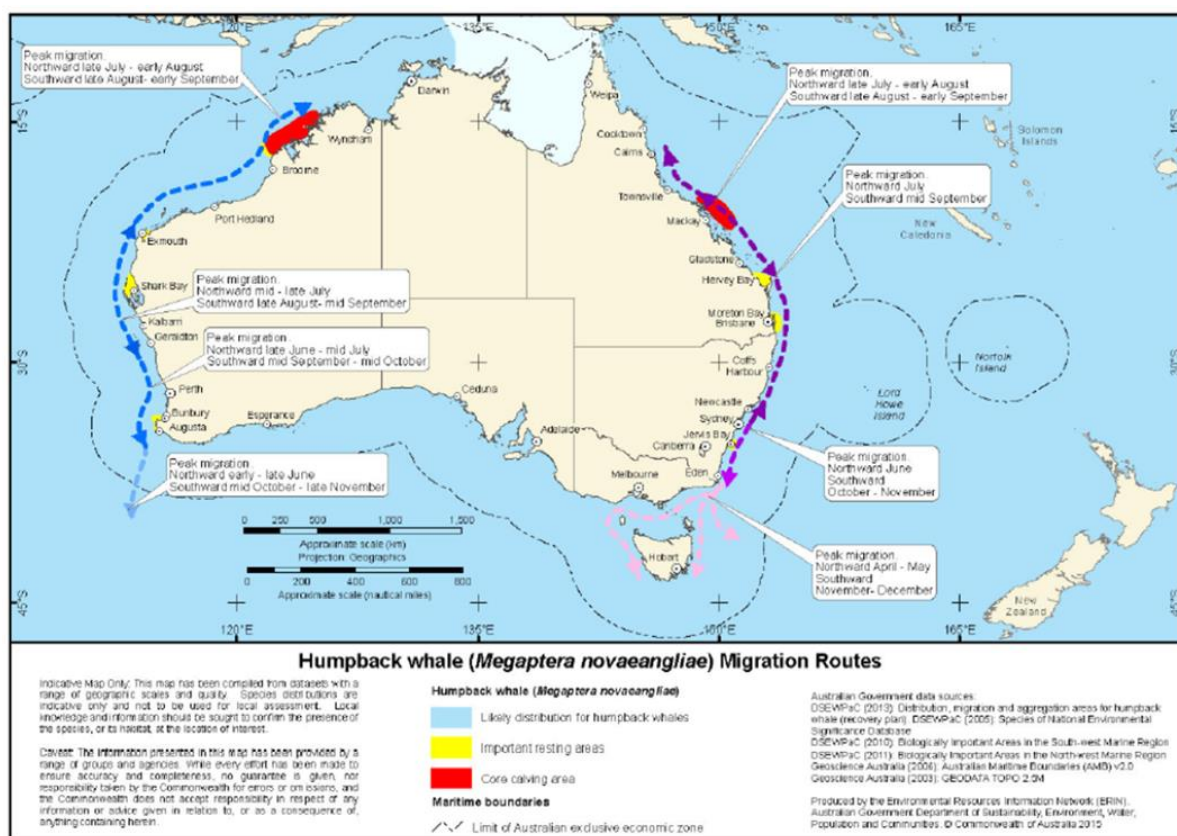


Figure 1-28 Migration routes for Humpback whales around Australia (TSSC, 2015)

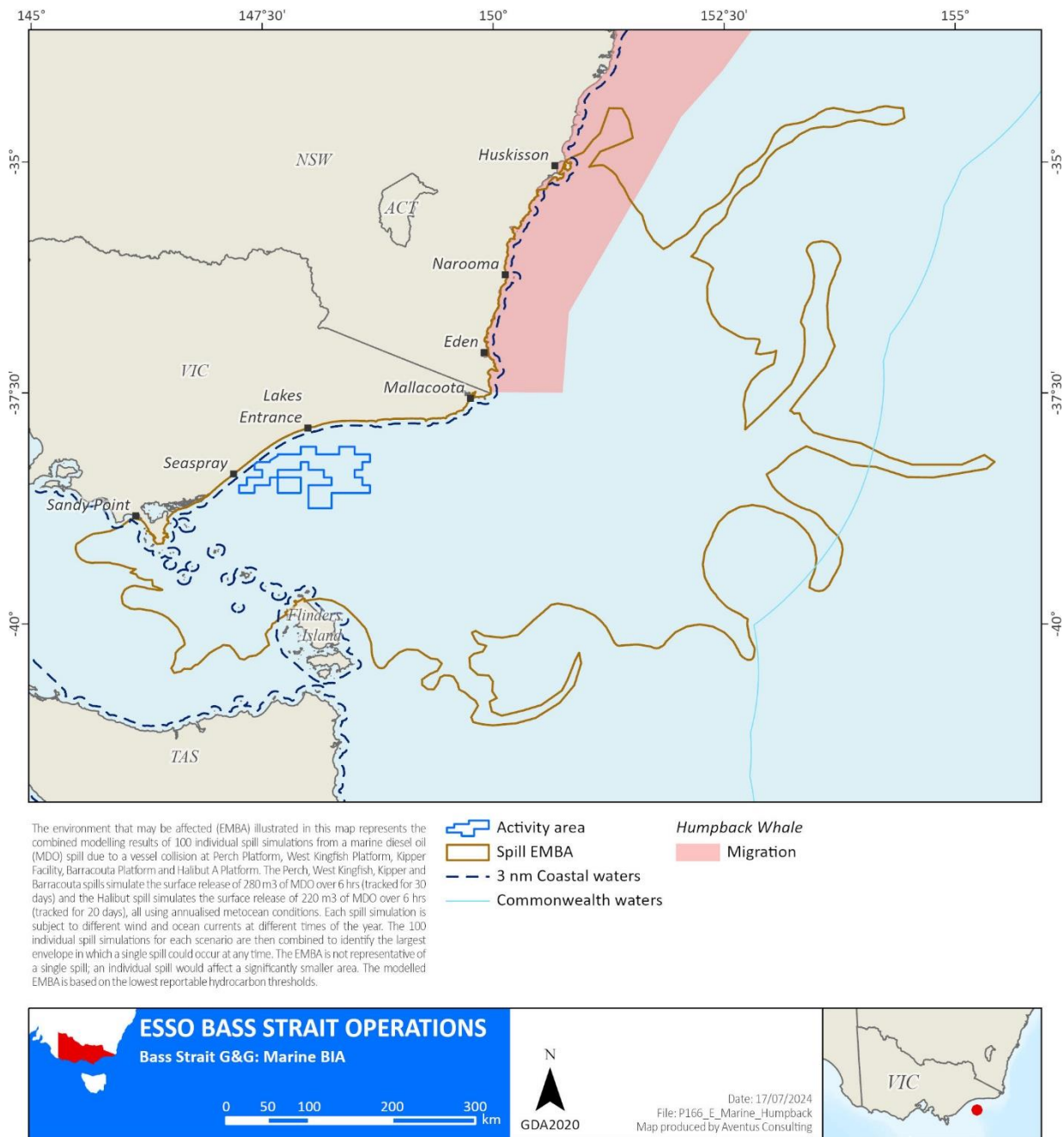


Figure 1-29 Humpback whale BIAs intersected by the EMBA

1.4.6.4 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).

1.4.6.5 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.

1.4.6.6 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).

1.4.6.7 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.

1.4.6.8 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).

1.4.6.9 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 for 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

1.4.6.10 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).

1.4.6.11 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 Western Australia 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).

1.4.6.12 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) (Figure 1-30) (DoEE, 2015).

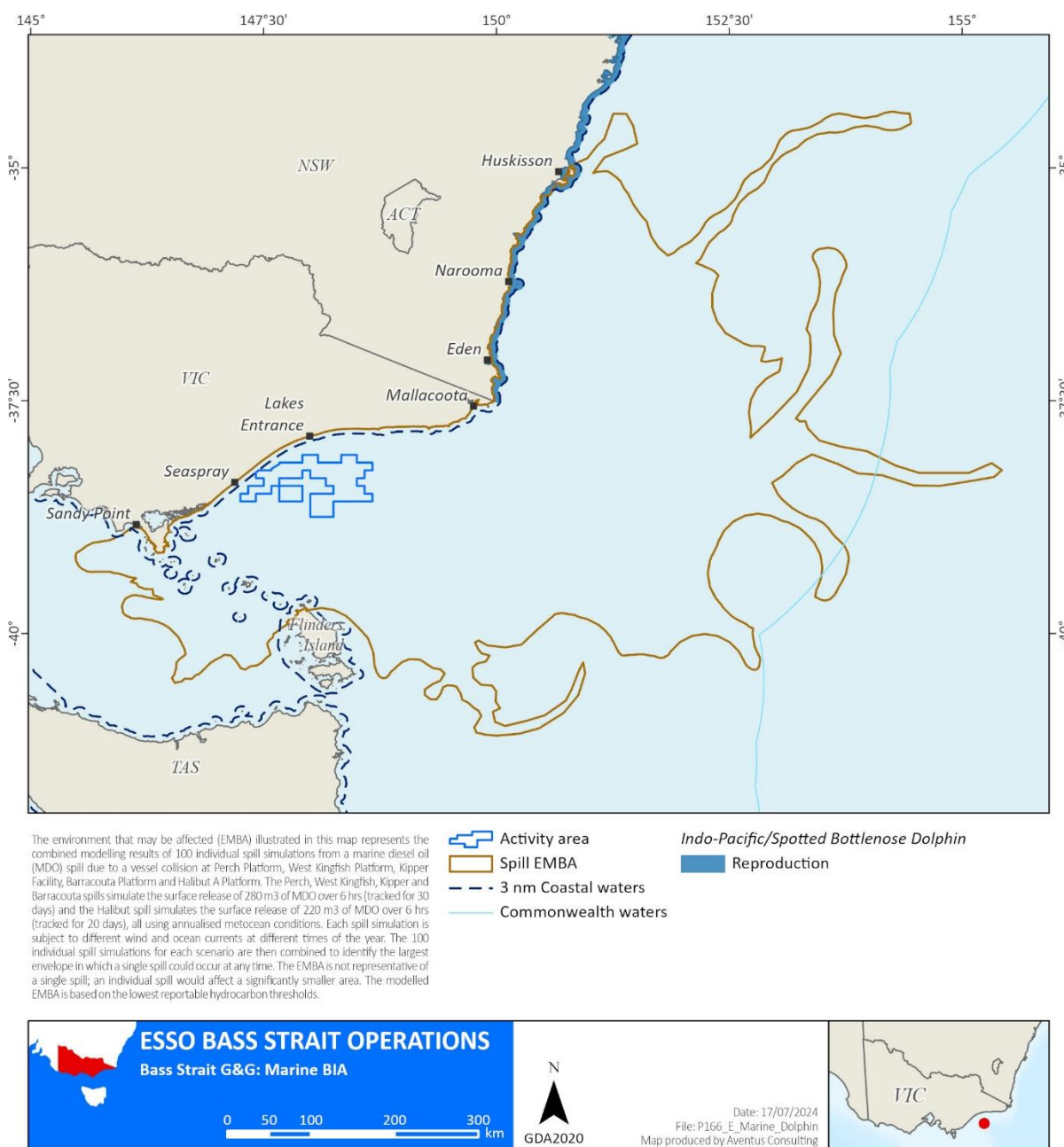


Figure 1-30 Indian Ocean bottlenose dolphin BIAs intersected by the EMBA

1.4.7 *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 H. H., 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 Western Australia (25°S) across the northern coastline to Moreton Bay in Queensland (27°S) (Marsh H. T., 2011) (Marsh H. H., 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).

1.4.8 *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.

1.4.8.1 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 1-31). 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 South Australia, Victoria, Tasmania, and NSW and are the only species of seal known to breed on Victorian and Tasmanian islands in Bass Strait (Kirkwood R. W., 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 R. W., 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 1-31):

- 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 R. W., 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 1-31):

- 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.

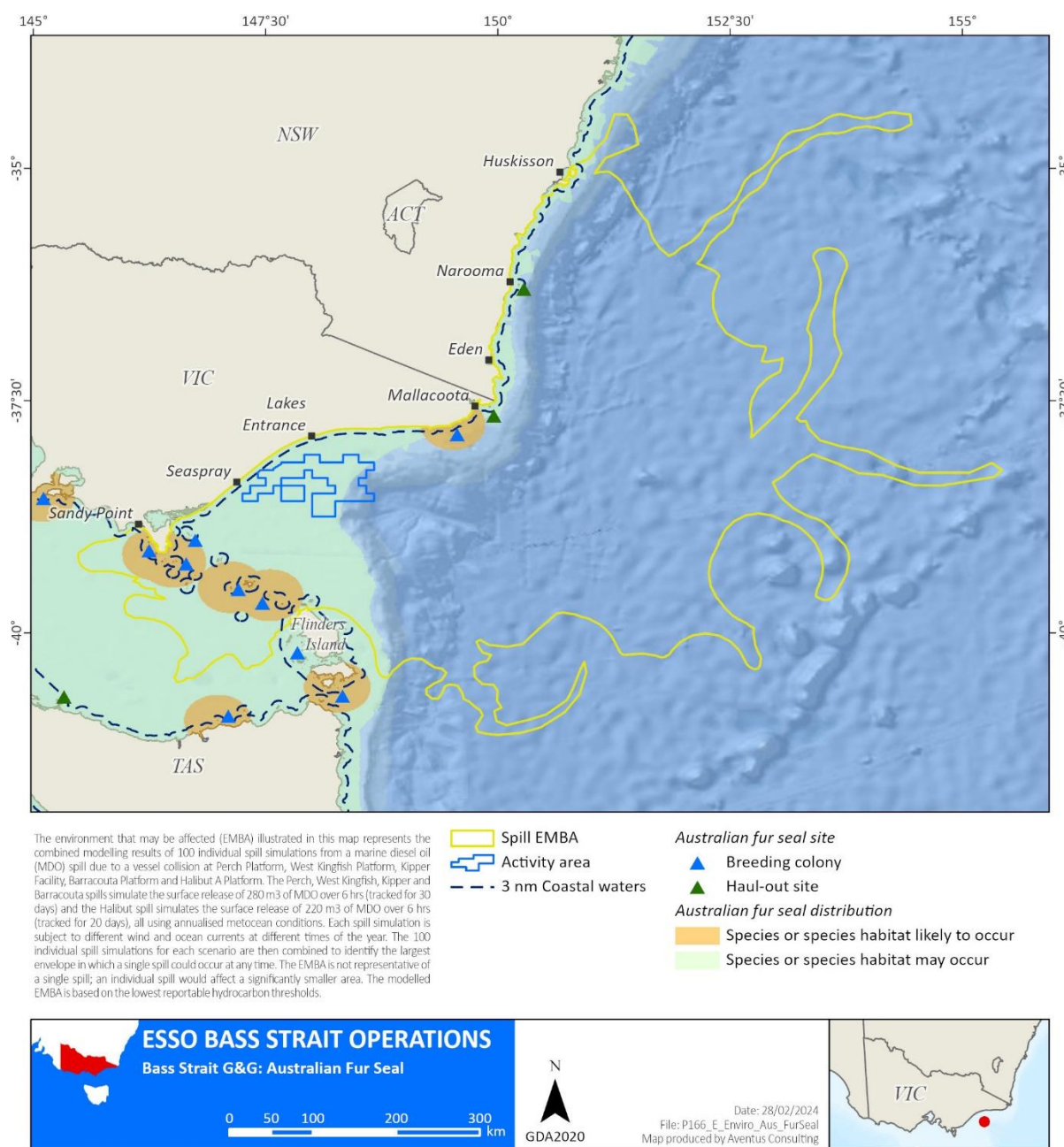


Figure 1-31 Australian fur-seal distribution, breeding colonies and haul-out sites within the EMBA

1.4.8.2 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 South Australia and Western Australia) (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 R. W., 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 1-32).

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 1-32):

- 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 1-32):

- 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 R. W., 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.

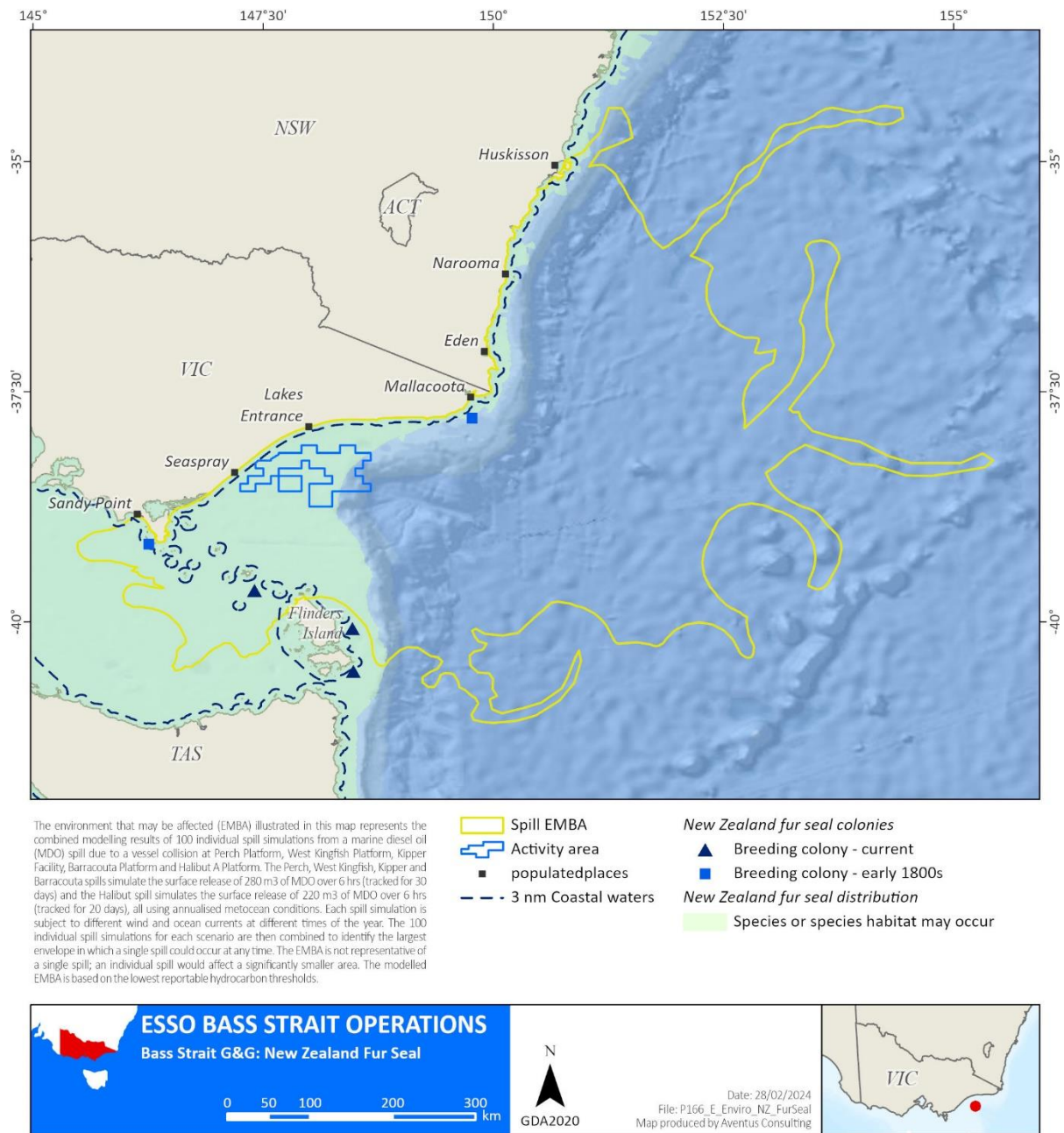


Figure 1-32 New Zealand fur seal distribution, breeding colonies and haul-out sites within the EMBA

1.4.9 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		

1.4.9.1 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 western Australia (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.

1.4.9.2 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.

1.4.9.3 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.

1.4.9.4 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 internesting, critical habitat, or BIAs, have been identified for the hawksbill turtle within the EMBA.

1.4.9.5 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 internesting, critical habitat, or BIAs, have been identified for the flatback turtle within the EMBA.

1.4.10 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 101 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')

1.4.10.1 Albatrosses & Petrels

The PMST report detected 16 albatross and 14 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 1-33, Figure 1-34, Figure 1-35, Figure 1-36 and Figure 1-37.

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	1,262 km southeast	13,000
Bishop and Clerk Islets	Black-browed albatross	1,308 km southeast	60
Heard Island	Black-browed albatross, light-mantled albatross, southern giant petrel	5,336 km southwest	36,800
McDonald Islands	Black-browed albatross, light-mantled albatross, southern giant petrel	5,336 km southwest	360
Giganteus Island	Southern giant petrel	5,396 km southwest	16
Hawker Island	Southern giant petrel	4,746 km southwest	190
Frazier Islands	Southern giant petrel	3,353 km southwest	60

Source: (CoA, 2022)

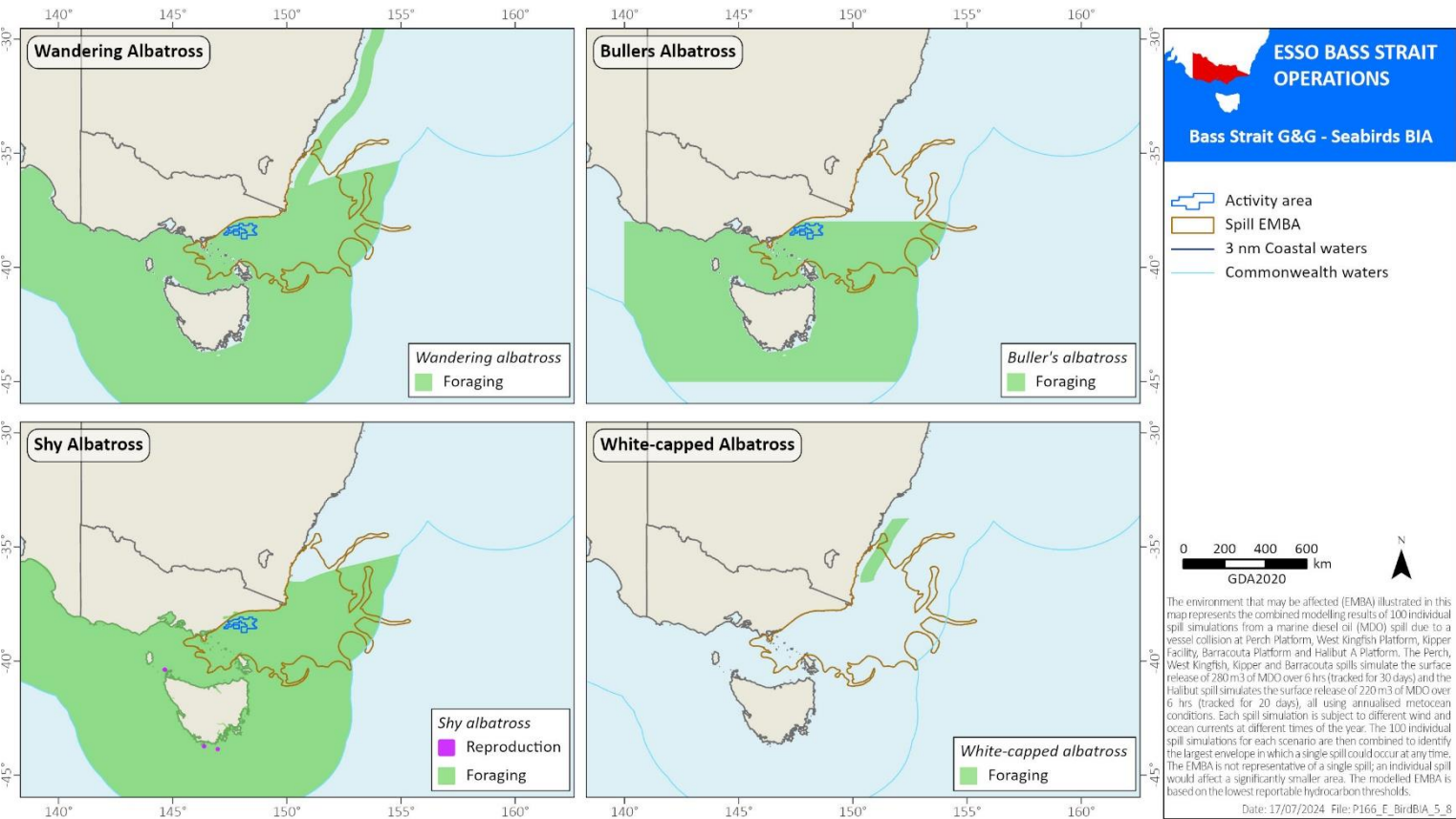


Figure 1-33 BIAs for the wandering, bullers, shy and white-capped albatrosses intersected by the EMBA

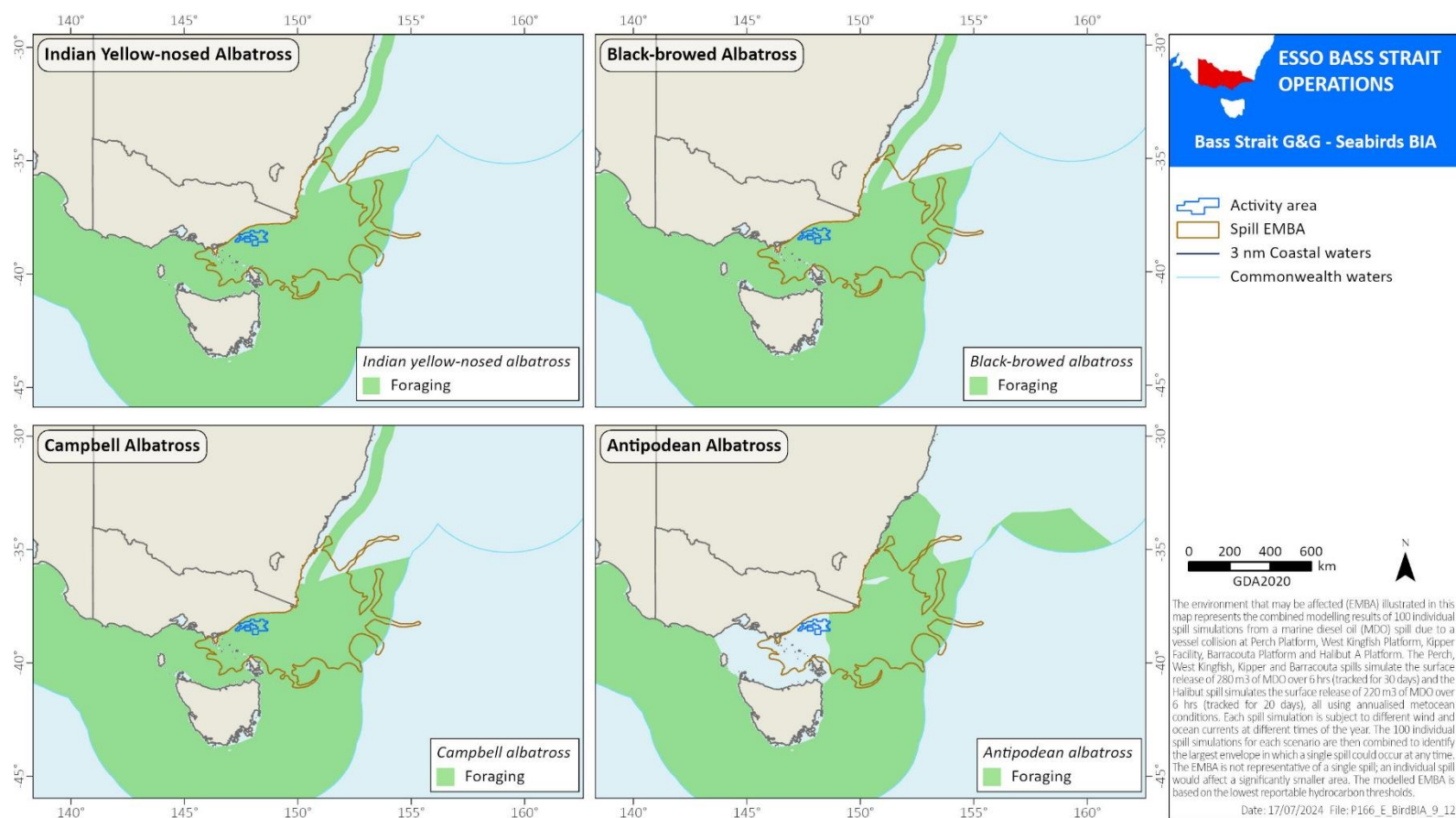


Figure 1-34 BIAs for the Indian yellow-nosed, black-browed, Campbell, and antipodean albatrosses intersected by the EMBA

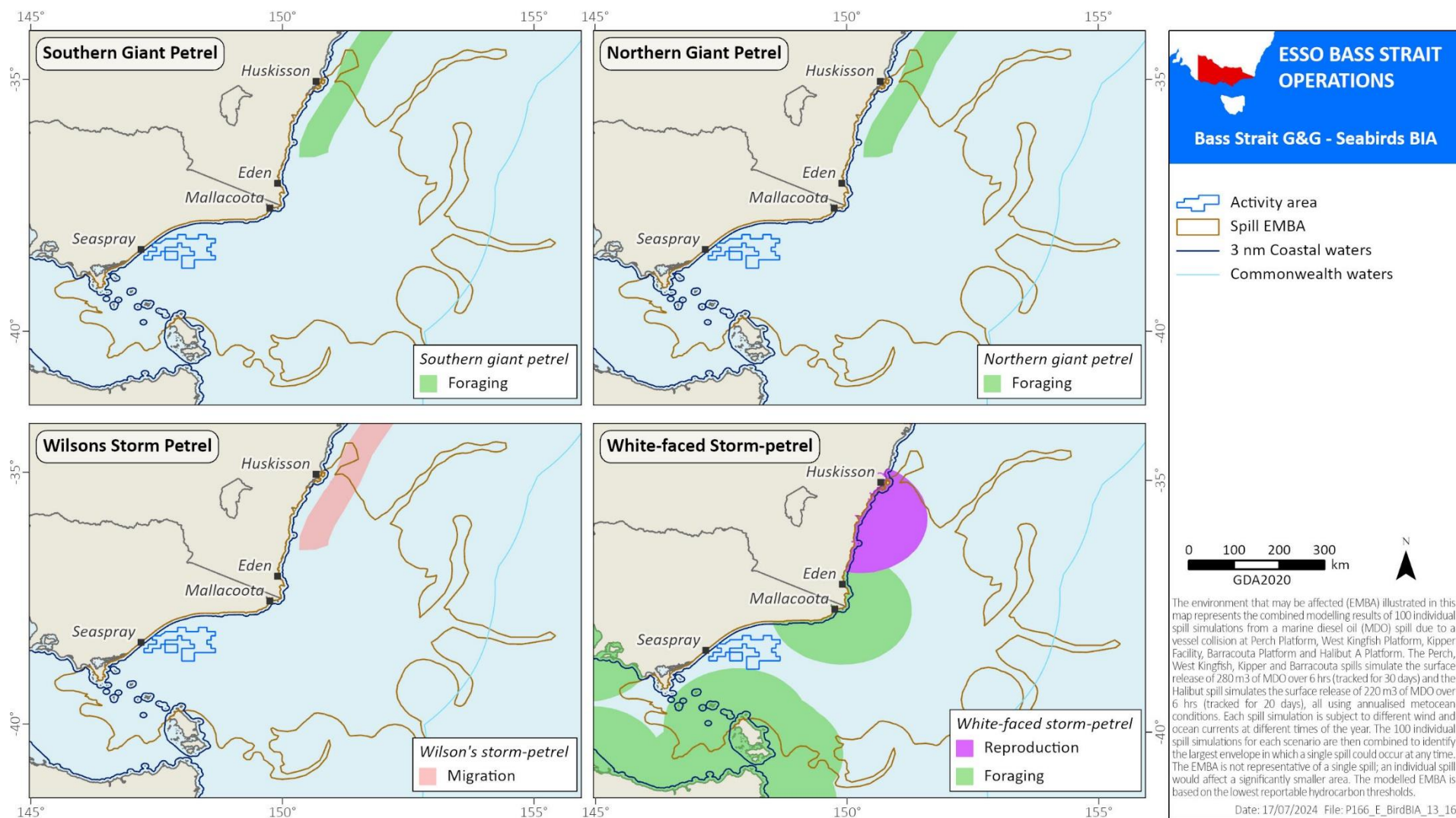


Figure 1-35 BIAs for the southern giant, northern giant, wilsons storm and white-bellied storm petrels intersected by the EMBA

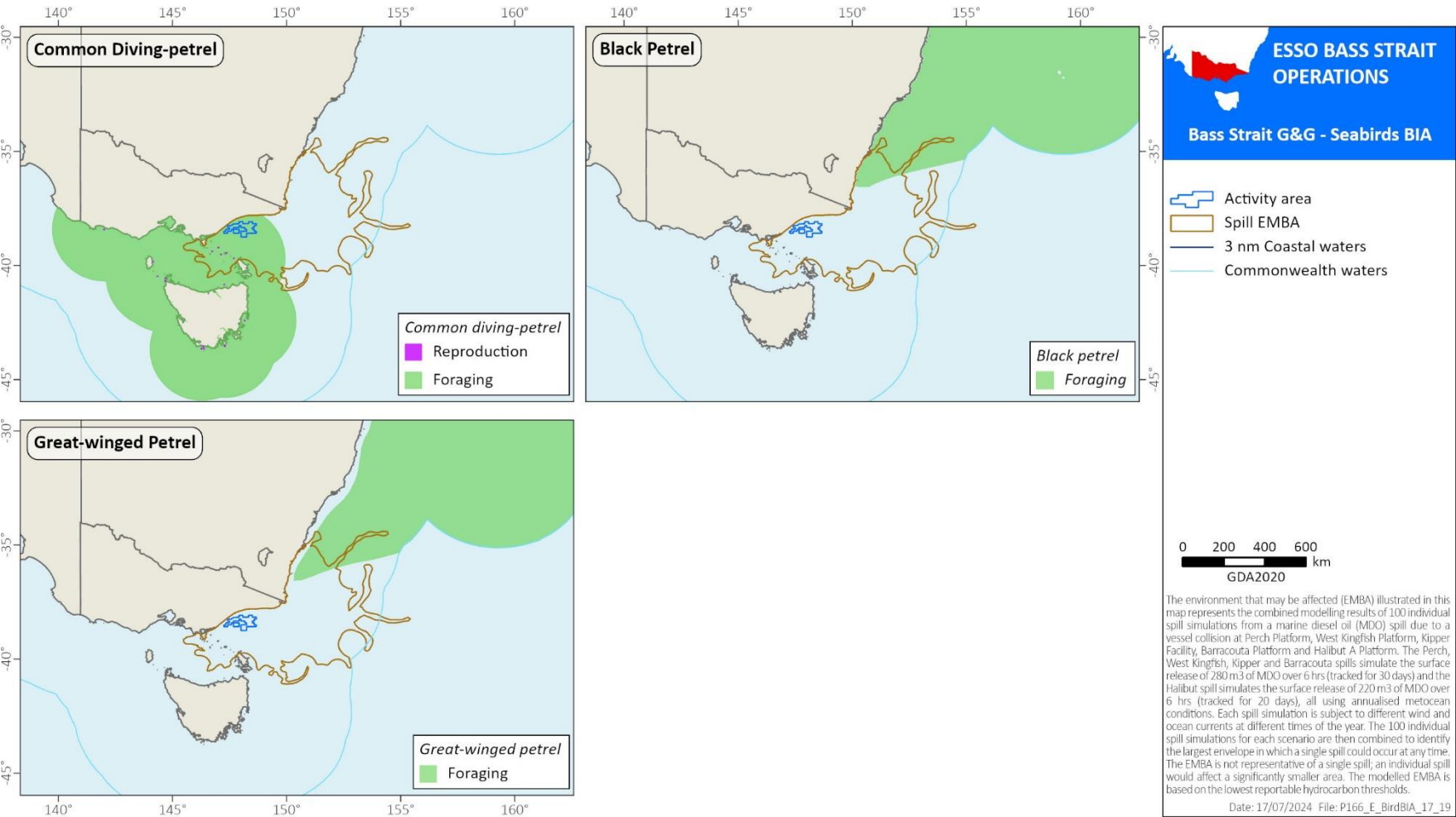


Figure 1-36 BIAs for the common diving, black, great winged petrels intersected by the EMBA

1.4.10.2 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 four Shearwater species are shown in Figure 1-38.

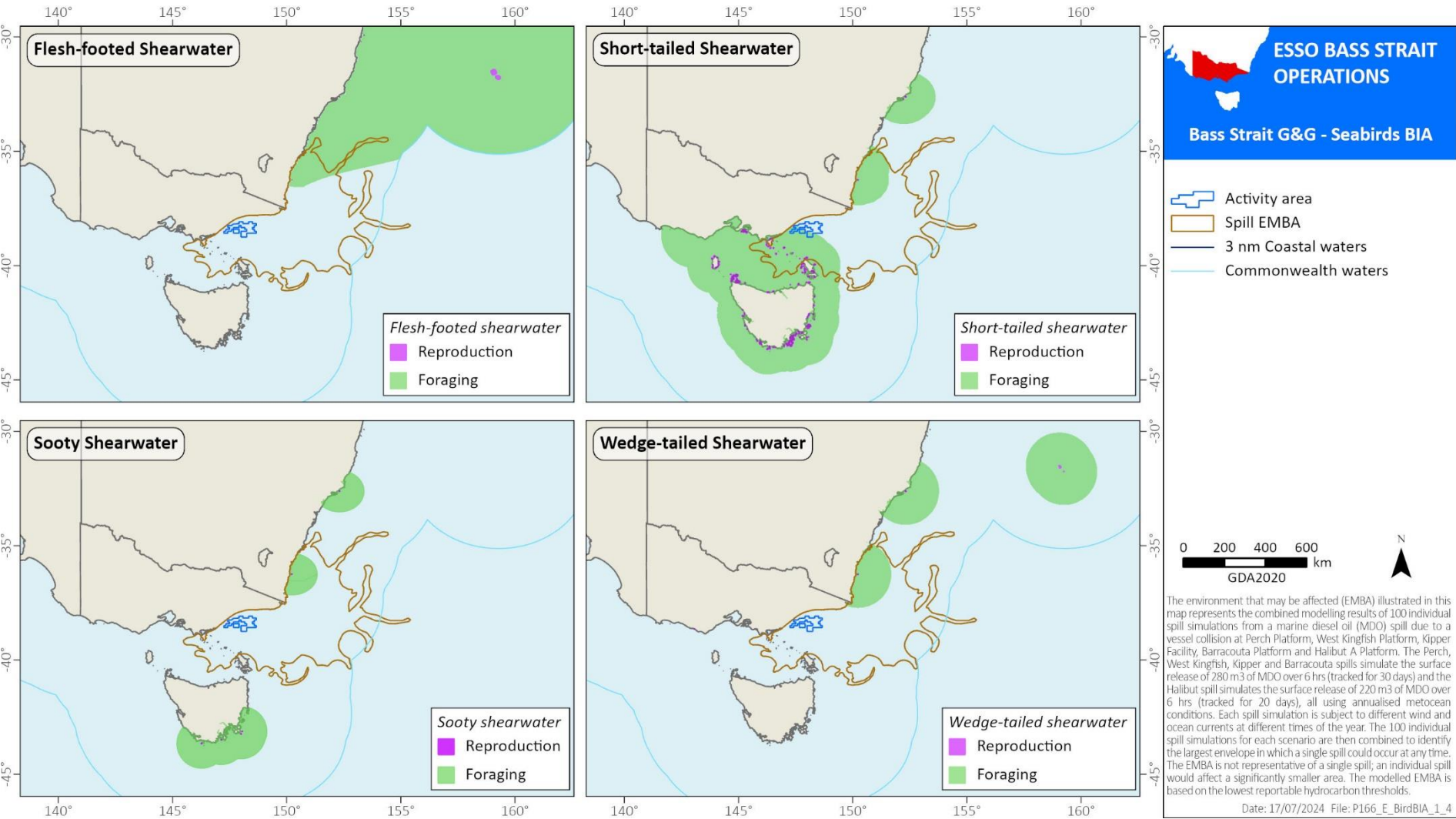


Figure 1-37 BIAs for the flesh-footed, short-tailed, sooty and wedge-tailed shearwaters intersected by the EMBA

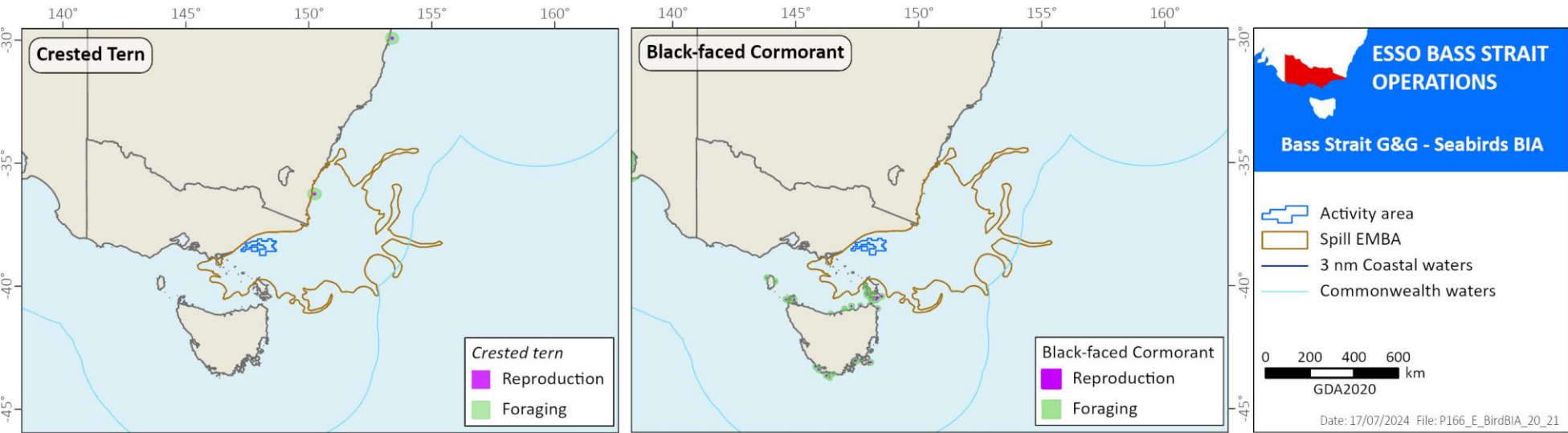
1.4.10.3 Other Seabirds

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 intercepted by the EMBA can be seen in Figure 1-39
- 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)

- 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 1-39
- 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)
- 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.



The environment that may be affected (EMBA) illustrated in this map represents the combined modelling results of 100 individual spill simulations from a marine diesel oil (MDO) spill due to a vessel collision at Perch Platform, West Kingfish Platform, Kipper Facility, Barracouta Platform and Halibut A Platform. The Perch, West Kingfish, Kipper and Barracouta spills simulate the surface release of 280 m3 of MDO over 6 hrs (tracked for 30 days) and the Halibut spill simulates the surface release of 220 m3 of MDO over 6 hrs (tracked for 20 days), all 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 1-38 BIAs for the crested tern and the black-faced cormorant intersected by the EMBA

1.4.10.4 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 Western Australia (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 1-39:

- 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 1-39:

- 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 1-39.

- 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 1-39.

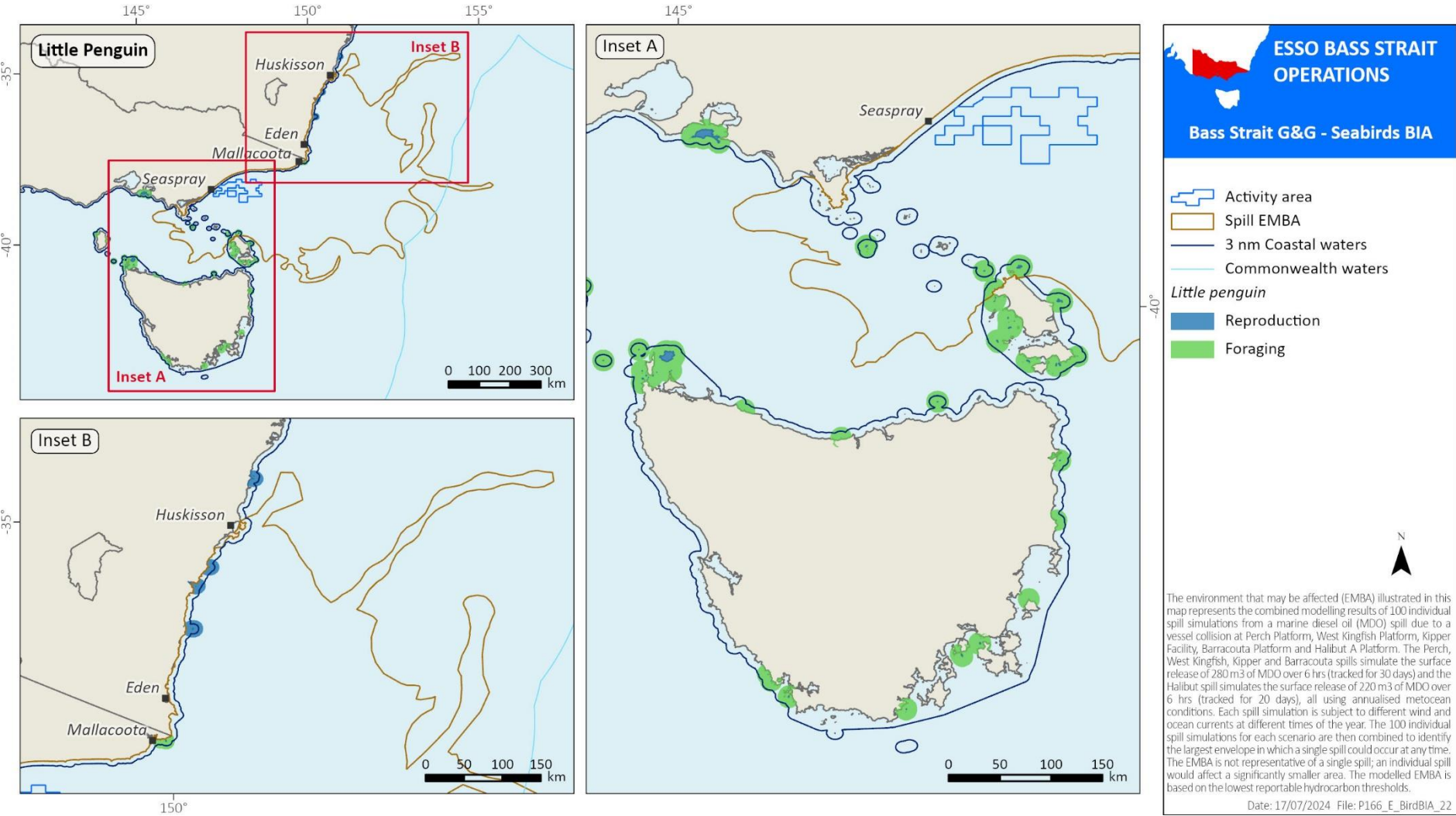


Figure 1-39 Little penguin BIAs intersected by the EMBA

1.4.10.5 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), 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 herbland 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 1-40.

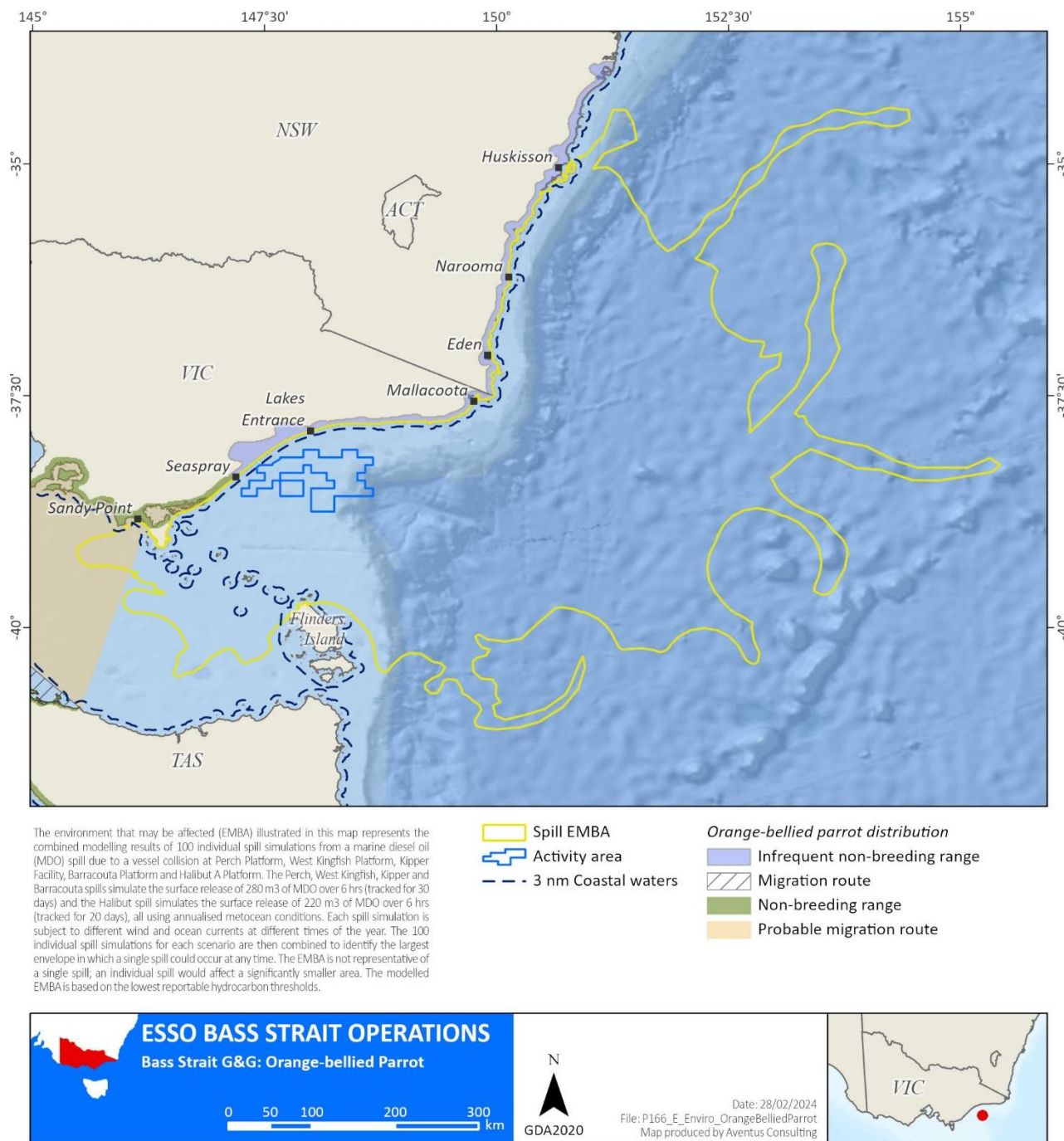


Figure 1-40 The range and migration route of the orange-bellied parrot intersected by the EMBA

1.4.10.6 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.

1.4.11 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, altering ecosystem processes and reducing biodiversity, causing major economic loss and disrupting human activities (Brusati, 2007).

In the SEMR, 115 invasive marine species (IMS) have been introduced and 11 have been recognised as pests (NOO, 2002a). In NSW waters, six listed marine pest species occur (CoA, 2012). Several introduced species have become pests either by displacing native species, dominating habitats, or causing algal blooms. The following marine pests are found within the waters of the EMBA:

- Caulerpa (*Caulerpa taxifolia*)
- European shore crab (*Carcinus maenas*)
- European fan worm (*Sabella spallanzanii*)
- Japanese goby (*Tridentiger trigonocephalus*)
- New Zealand screw shell (*Maoricolpus roseus*)
- Pacific oyster (*Crassostrea gigas*)
- Northern Pacific seastar (*Asterias amurensis*)
- Dead man's fingers (*Codium fragile* ssp. *fragile*)
- Cord grass (*Spartina anglica* and *Spartina x townsendii* sp.)

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 1-41. They are all important rookeries for mutton birds and important cultural resources for Tasmanian Aboriginal people.

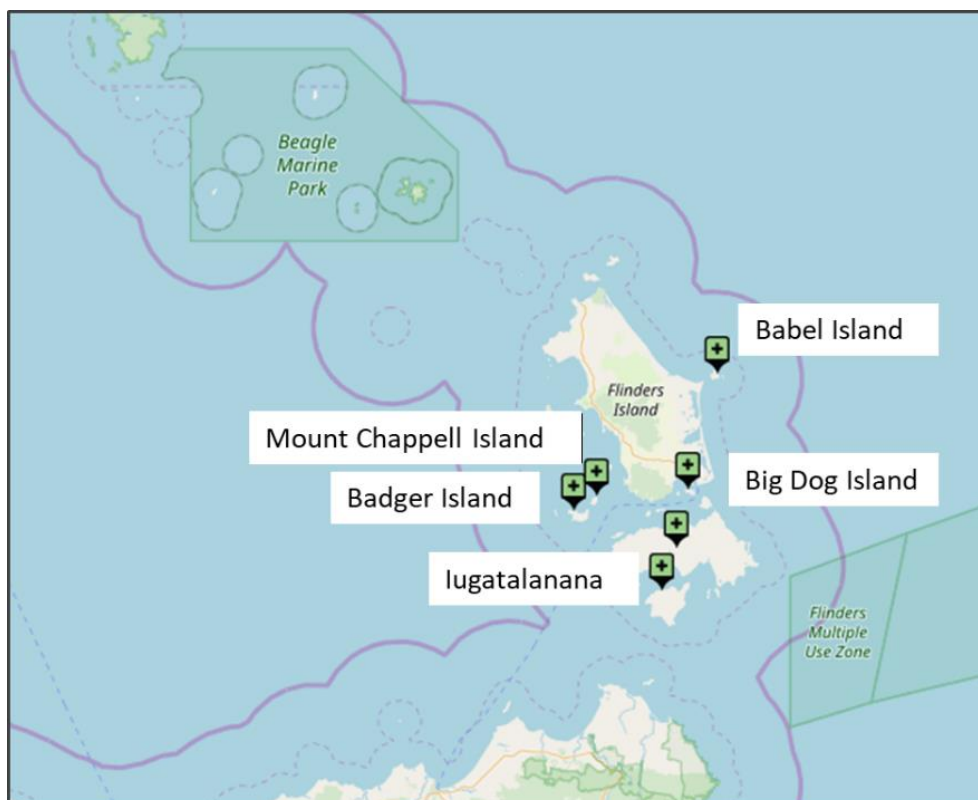


Figure 1-41 IPAs within the EMBA

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 1-42) 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 1-42 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).

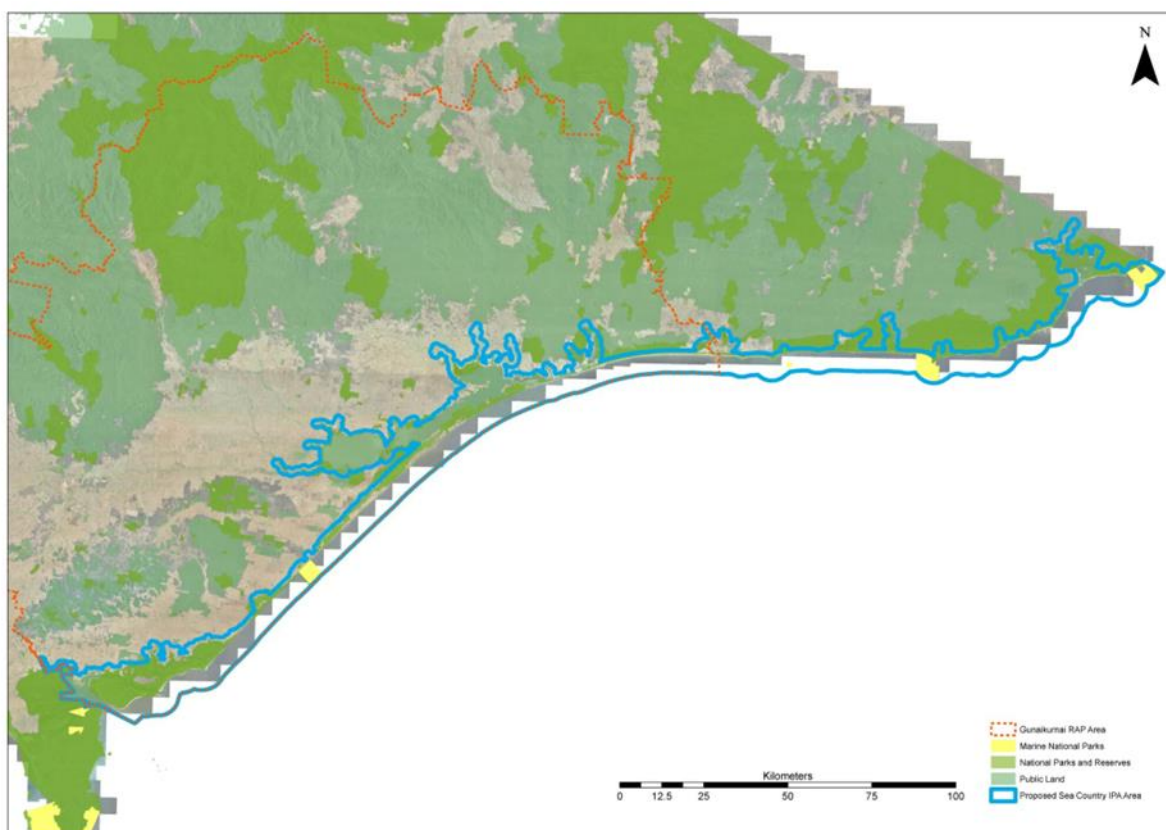


Figure 1-42 Proposed Nanjit to Mallacoota Sea Country IPA

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 1-43). 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 R. a., 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 1-43). 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).

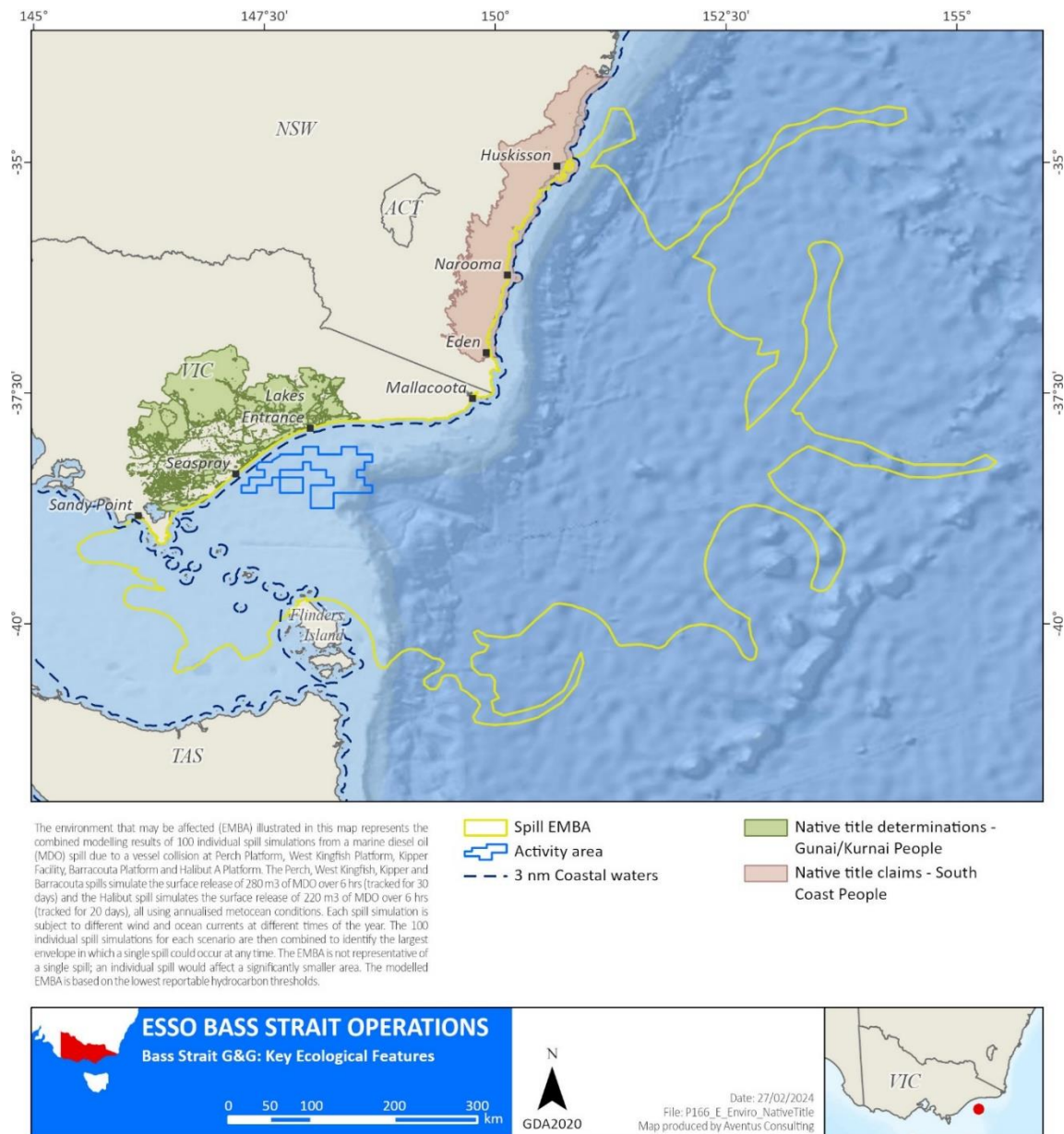


Figure 1-43 Native Title claims and determinations intersected by the EMBA

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 1-44). 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 1-45 maps the location of known shipwrecks within the EMBA.

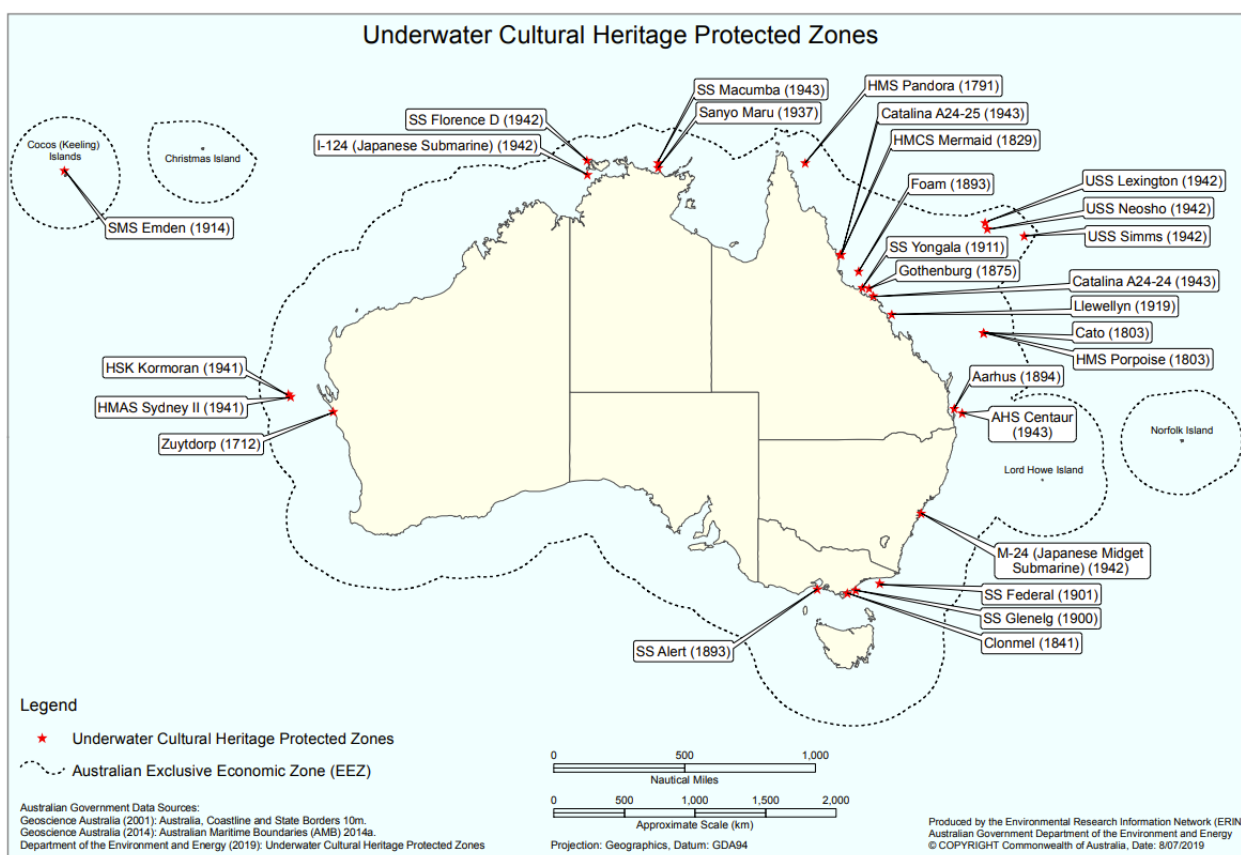


Figure 1-44 Shipwreck protection zones within Australia (ERIN, 2019)

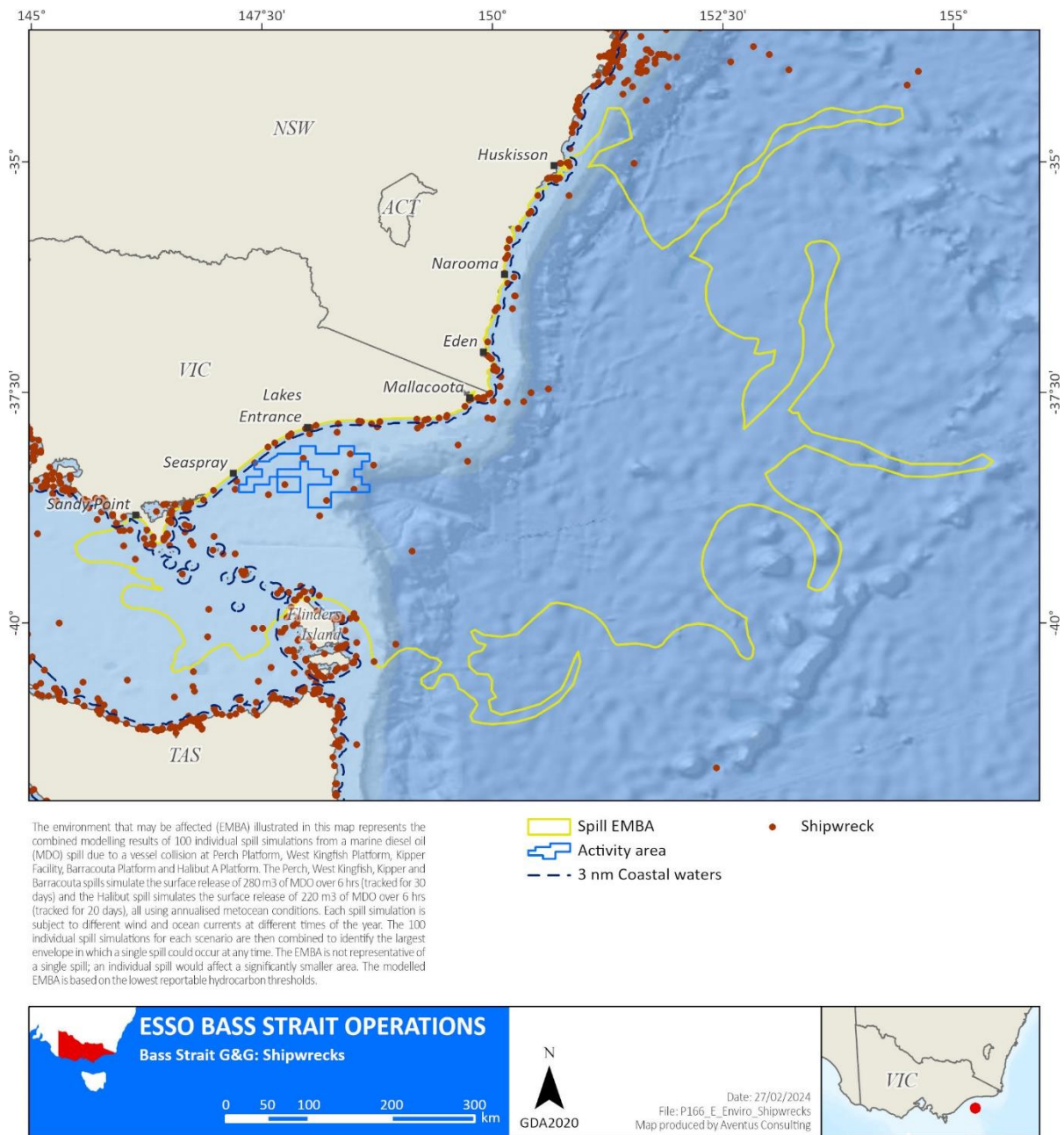


Figure 1-45 Shipwrecks within the EMBA

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 (Figure 1-46).</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>	42.9 %
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 (Figure 1-47).</p> <p>Catch for the 2022 fishing season was 4,032 t valued at \$34.7M, with 42 active vessels. The primary landing ports are Bermagui, Coffs Harbour and Ulladulla (NSW), Cairns, Mooloolaba and Southport (QLD).</p>	6.4 %
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 Western Australia. 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 (Figure 1-48).</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>	6.8 %

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 1-49) 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)	<p>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 1-50) with fishing intensity being saturated around eastern Victoria during the 2022-23 season. And Danish-seine fishing methods with fishing intensity being saturated around eastern Victoria and eastern Tasmania during the 2022-23 season.</p> <p>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.</p>	18.4 %
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)	<p>The SHS extends around south-eastern Australia to the border between SA and Western Australia (Figure 1-52). 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 fishing season occurred in eastern and western Victoria and along the coast of Tasmania (excluding the northern coast) (Figure 1-52).</p> <p>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.</p>	7.3 %

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 (Figure 1-53). The hook sector maximum area fished in the 2022-23 season was in eastern and western Victoria and majority of the Tasmanian coast (Figure 1-54).</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>	9.5 %
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 (Figure 1-55).</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>	3.0 %
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 (Figure 1-56).</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>	8.5 %

Source: (Butler, 2023.)

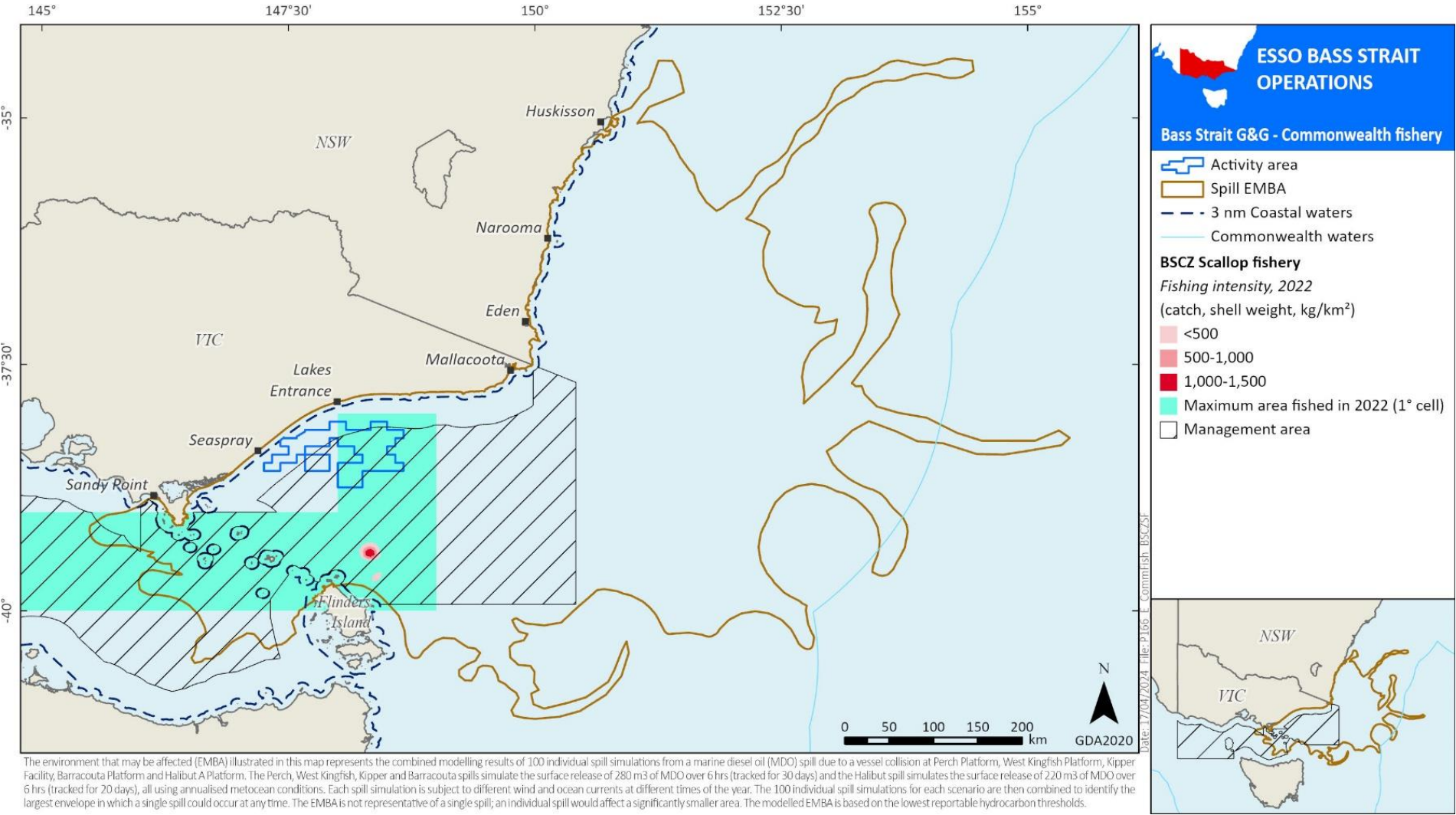


Figure 1-46 BSCZSF jurisdiction and fishing intensity (2022 season) intersected by the EMBA

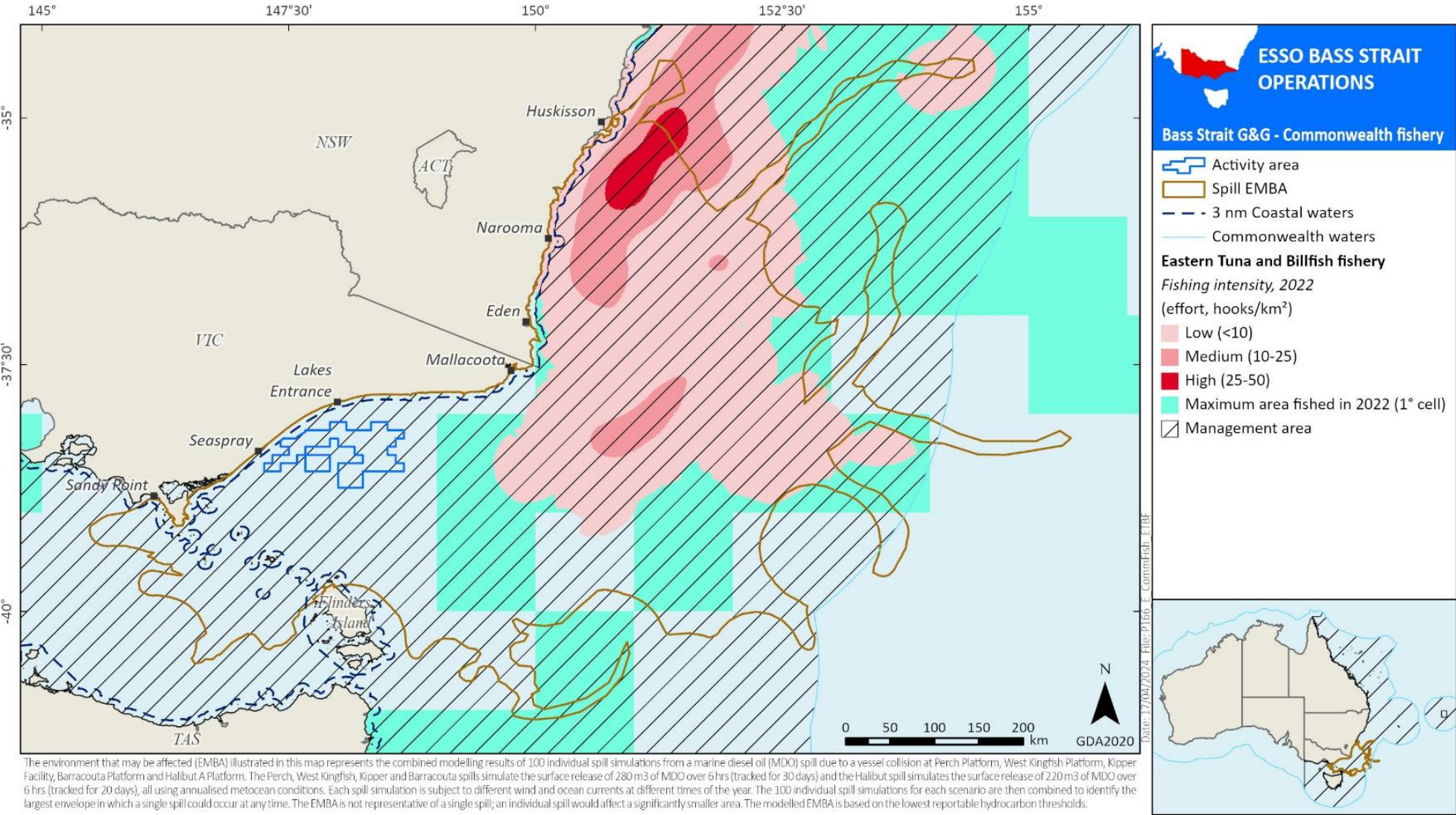


Figure 1-47 ETBF jurisdiction and fishing intensity (2022 season) intersected by the EMBA

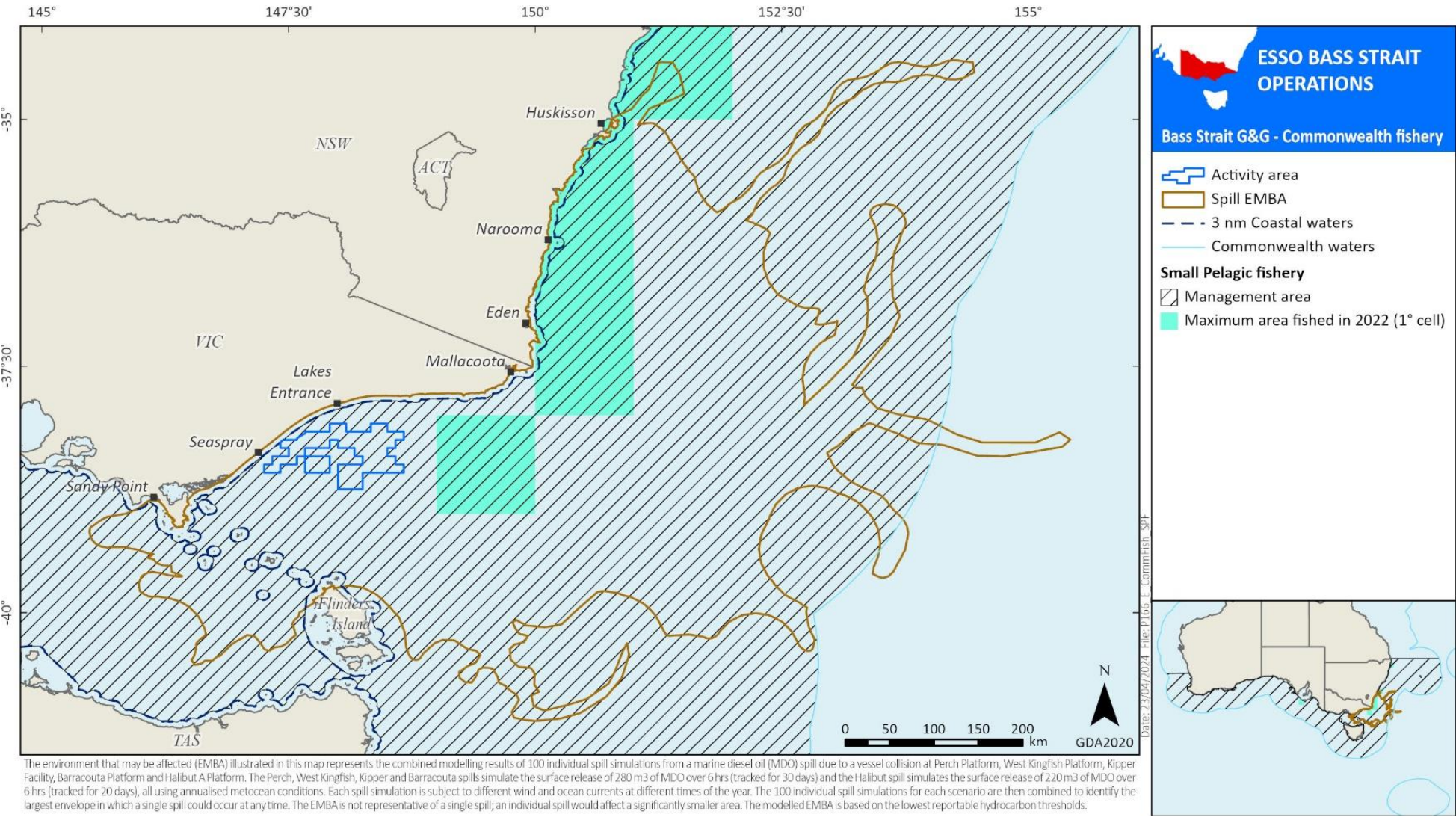


Figure 1-48 SPF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

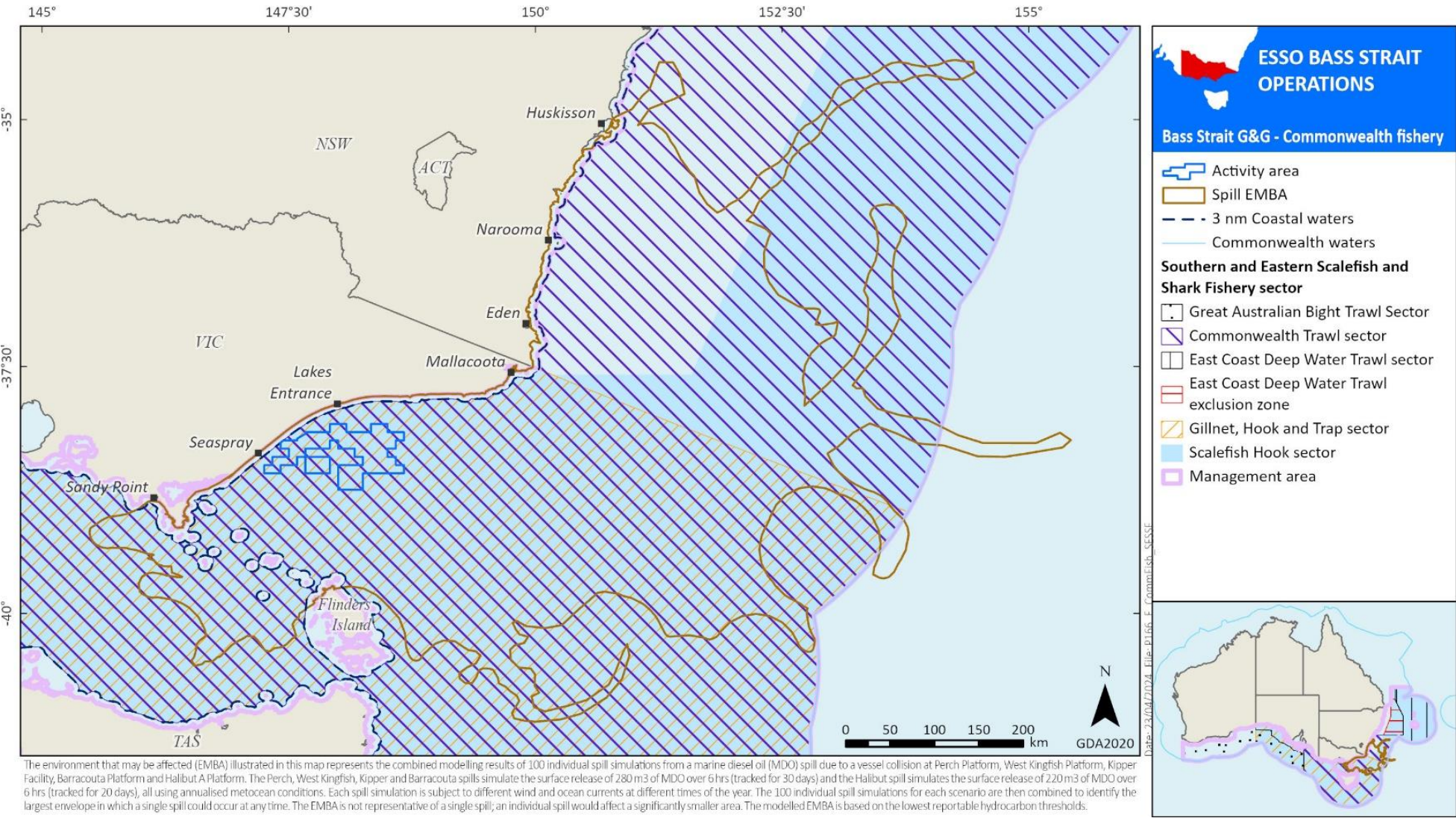


Figure 1-49 SESSF fishery sector zones intersected by the EMBA

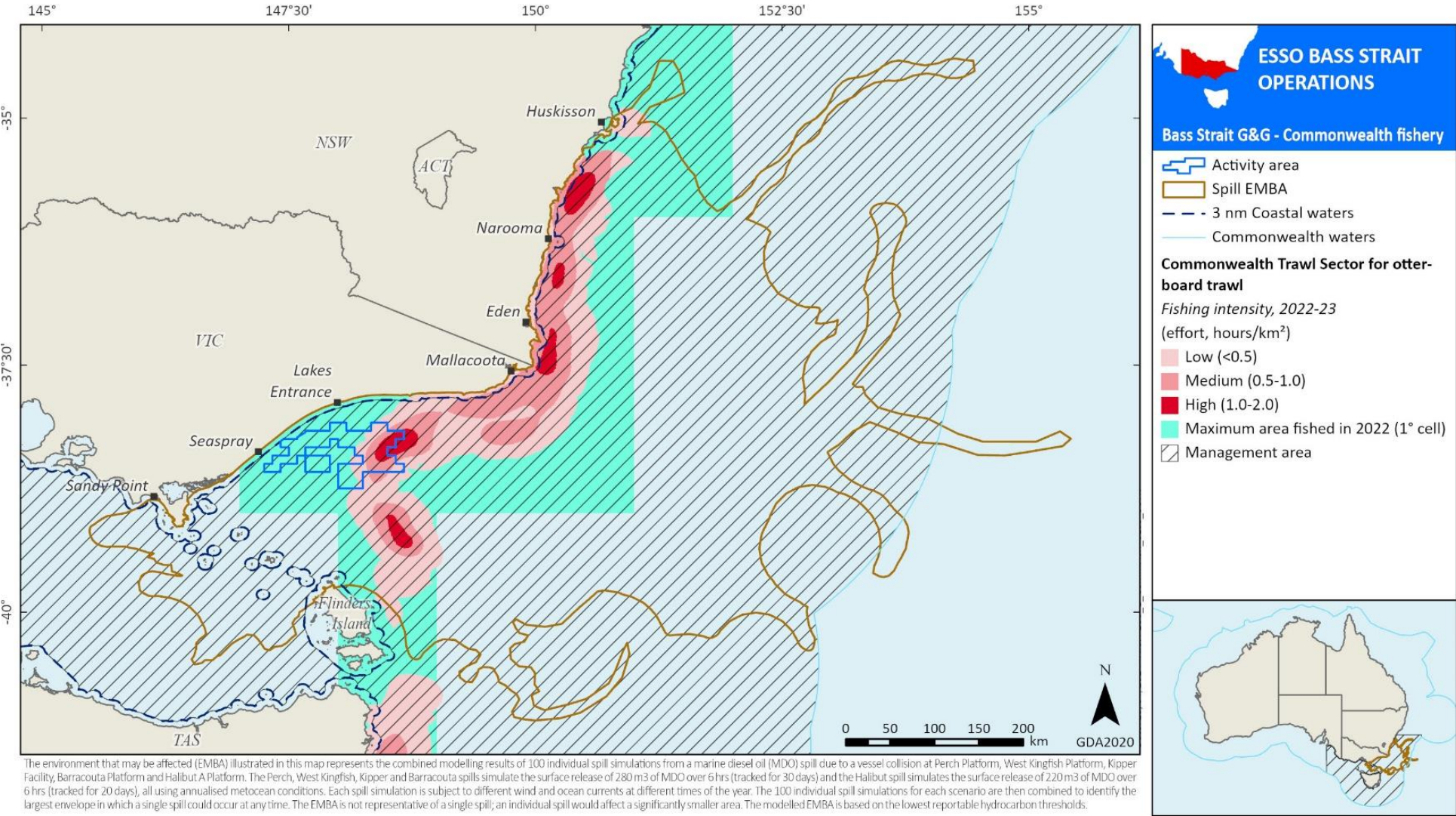


Figure 1-50 SESSF CTS otter-board jurisdiction and fishing intensity (2020 season) intersected by the EMBA

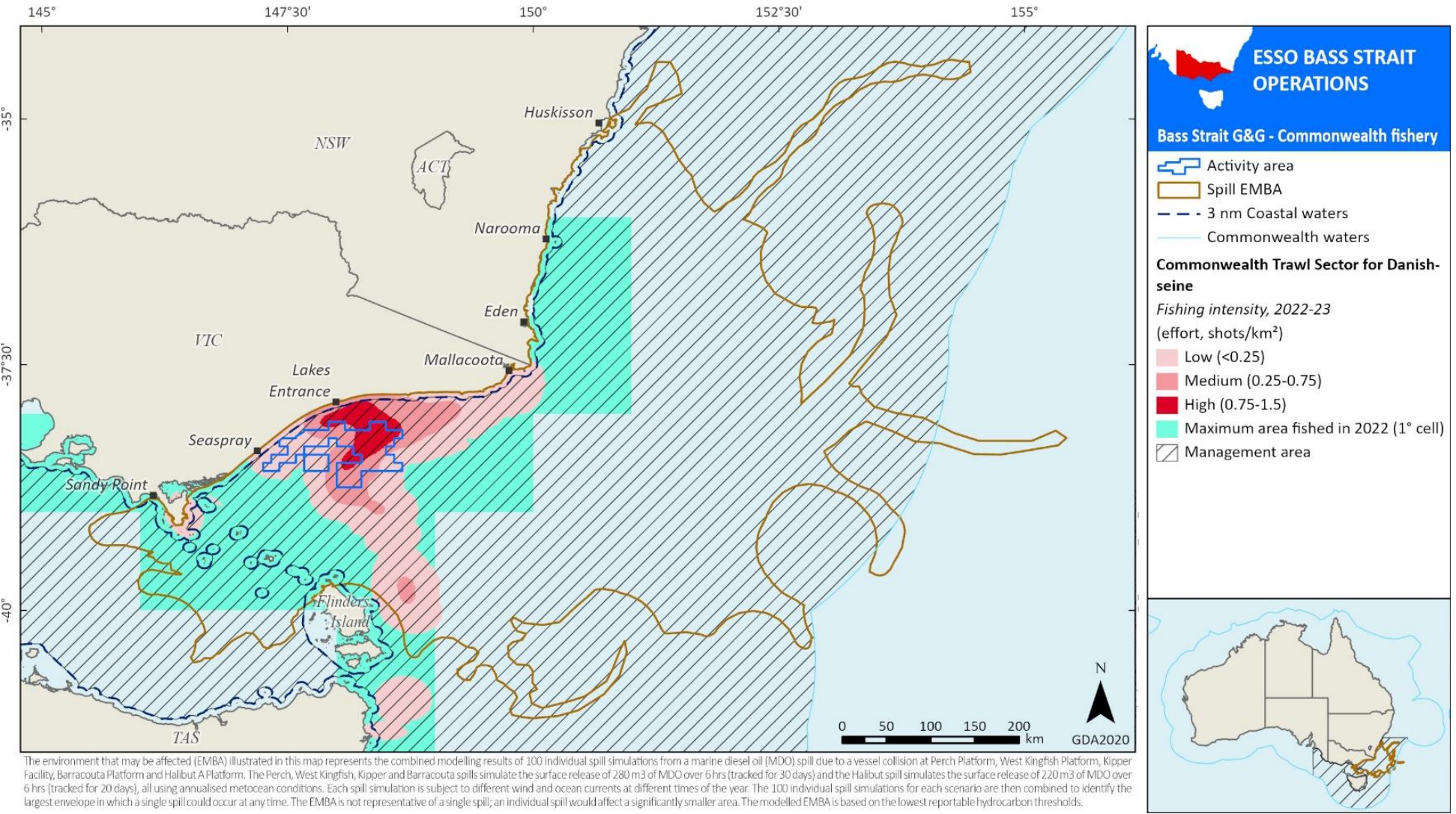


Figure 1-51 SESSF CTS Danish-seine jurisdiction and fishing intensity (2020 season) intersected by the EMBA

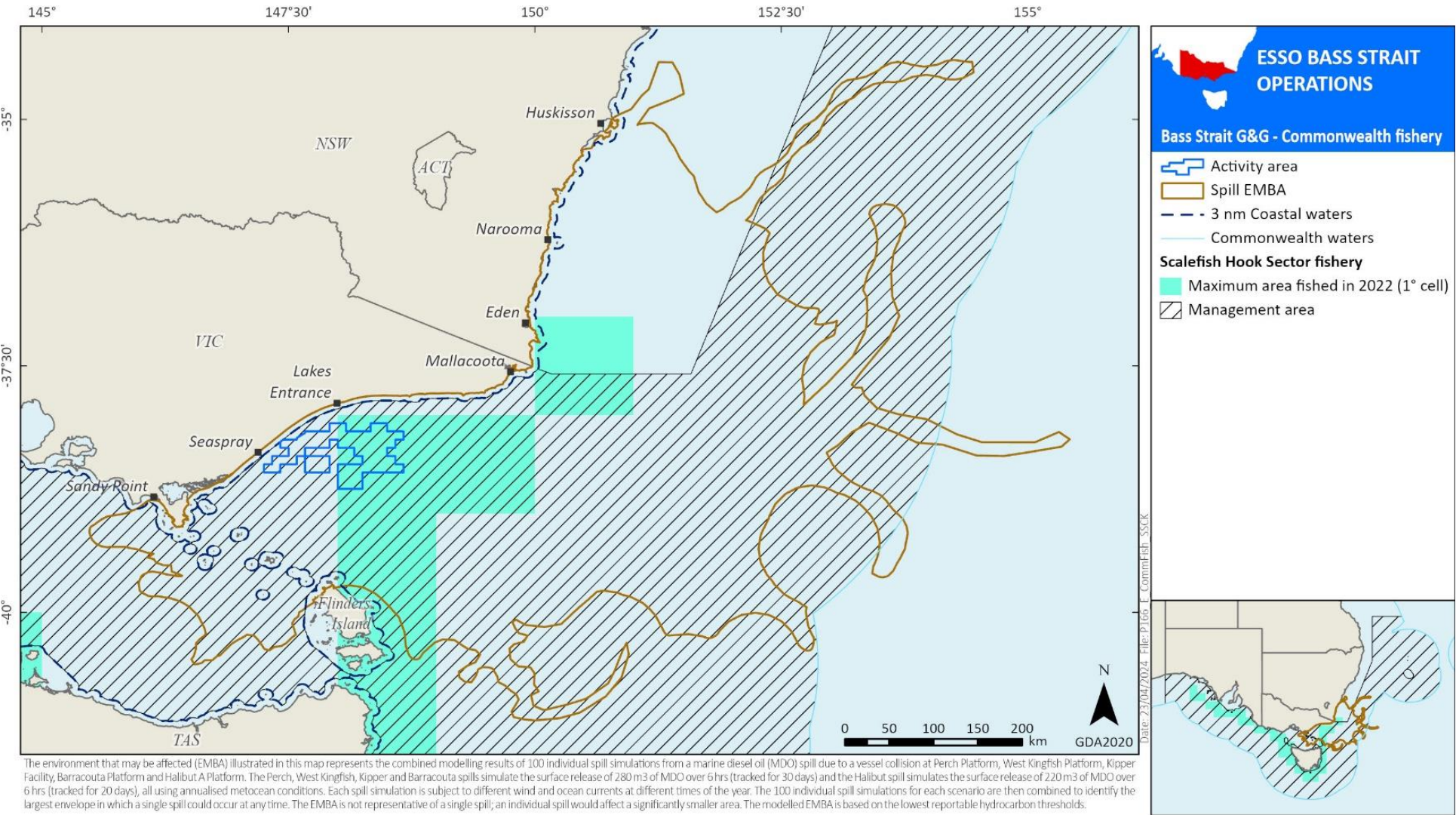
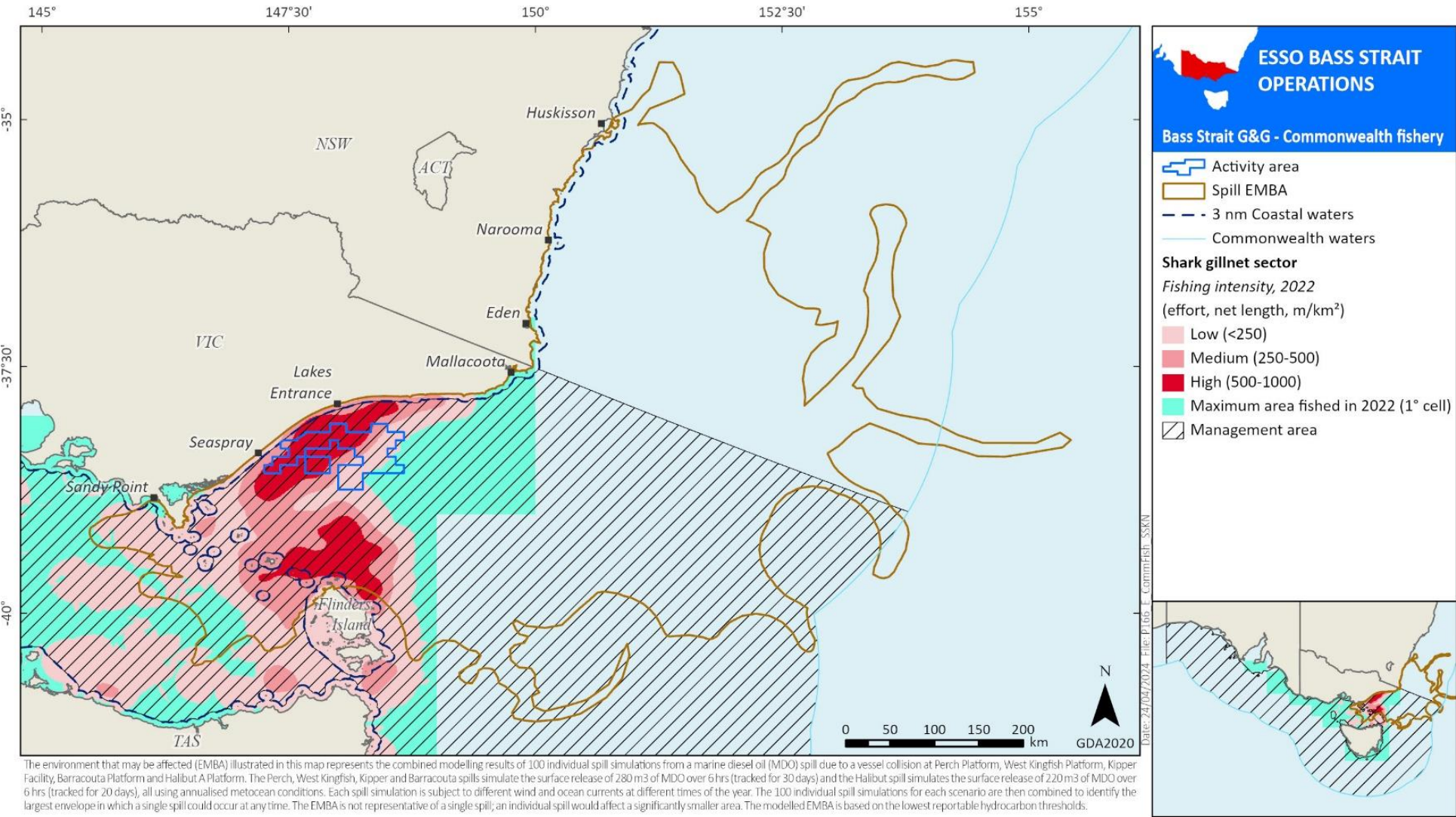


Figure 1-52 SHS jurisdiction and fishing intensity (2020 season) intersected by the EMBA



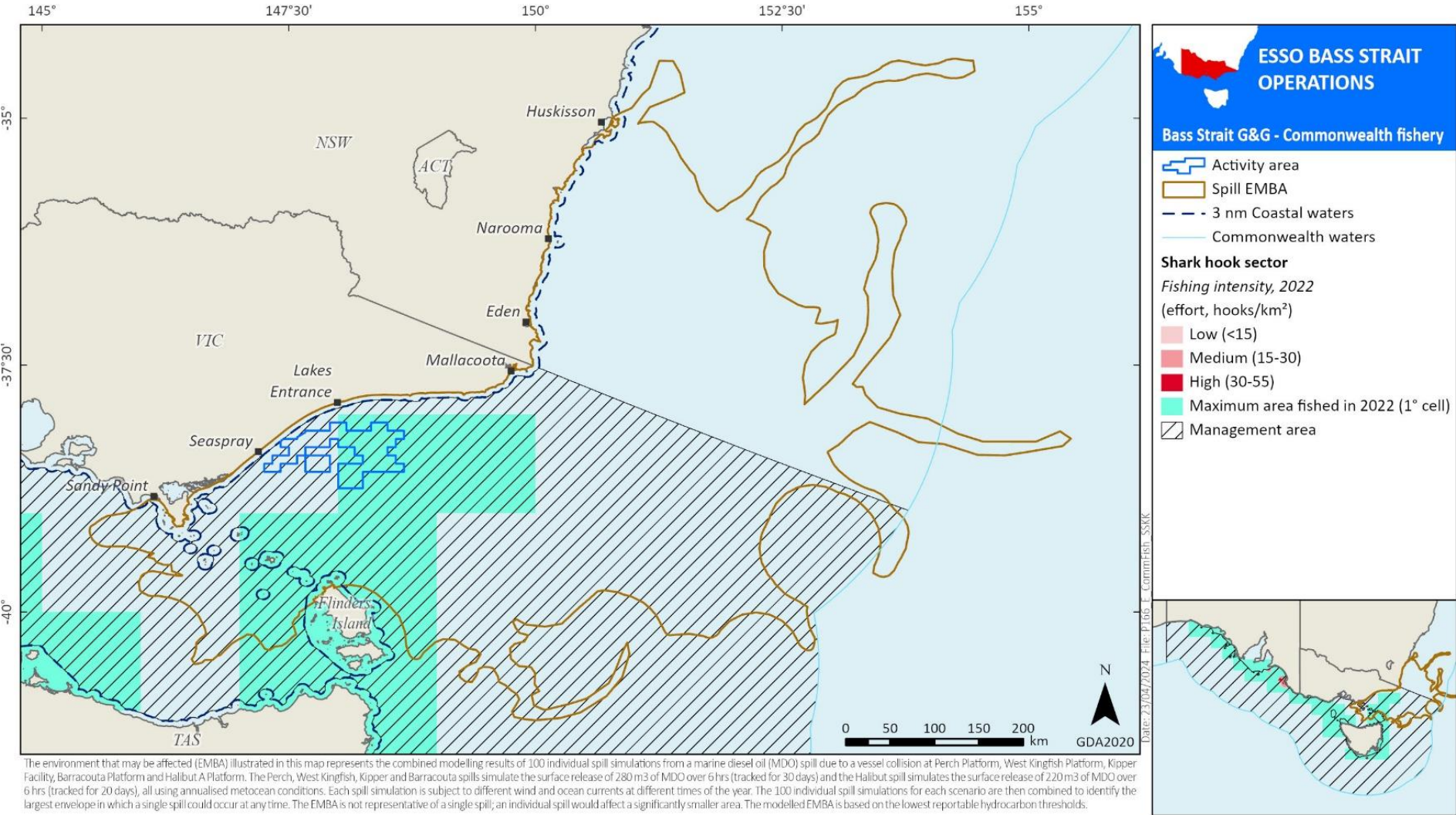


Figure 1-54 SESSF SGSHS hook jurisdiction and fishing intensity (2020 season) intersected by the EMBA

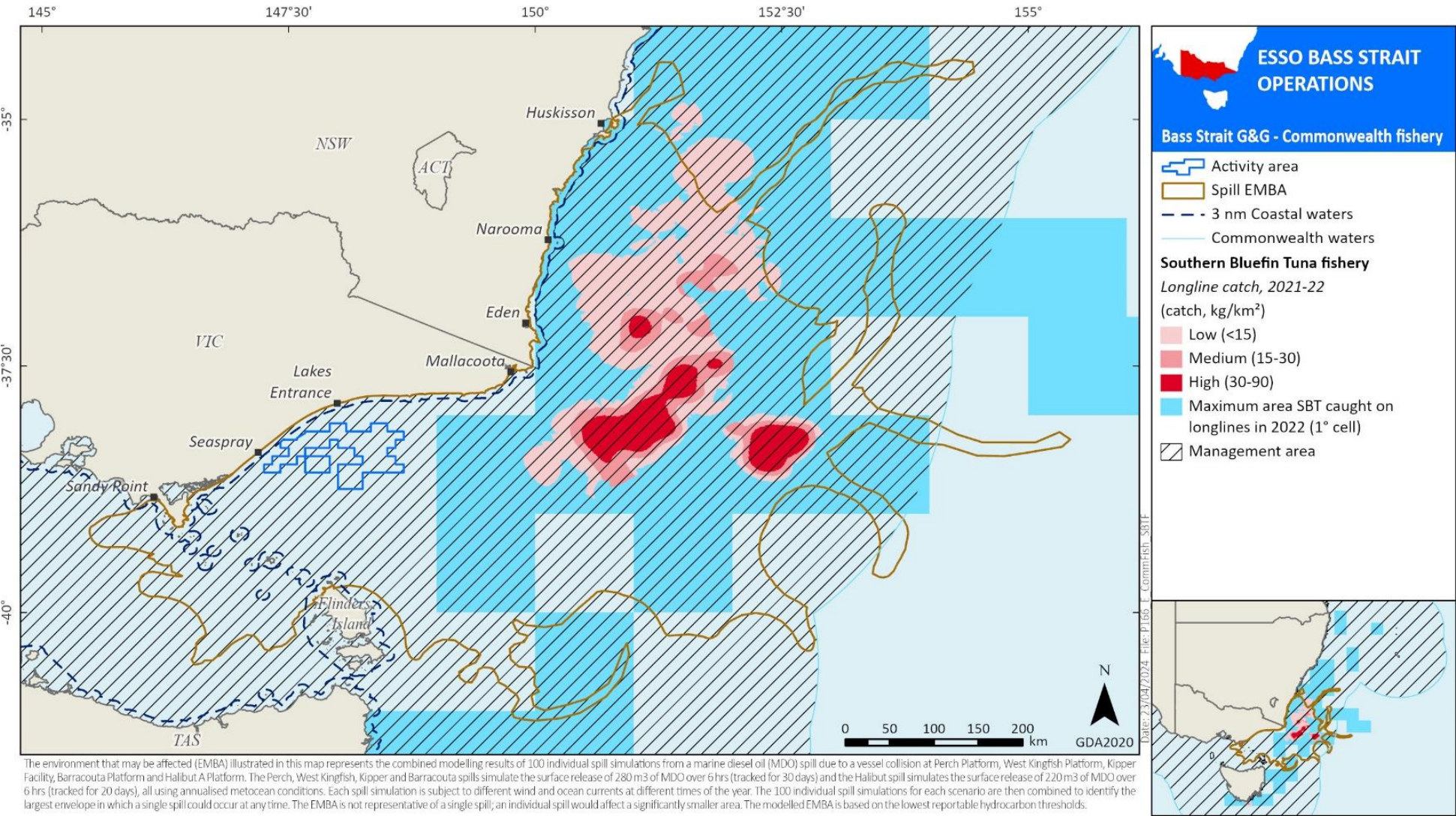


Figure 1-55 SBFTF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

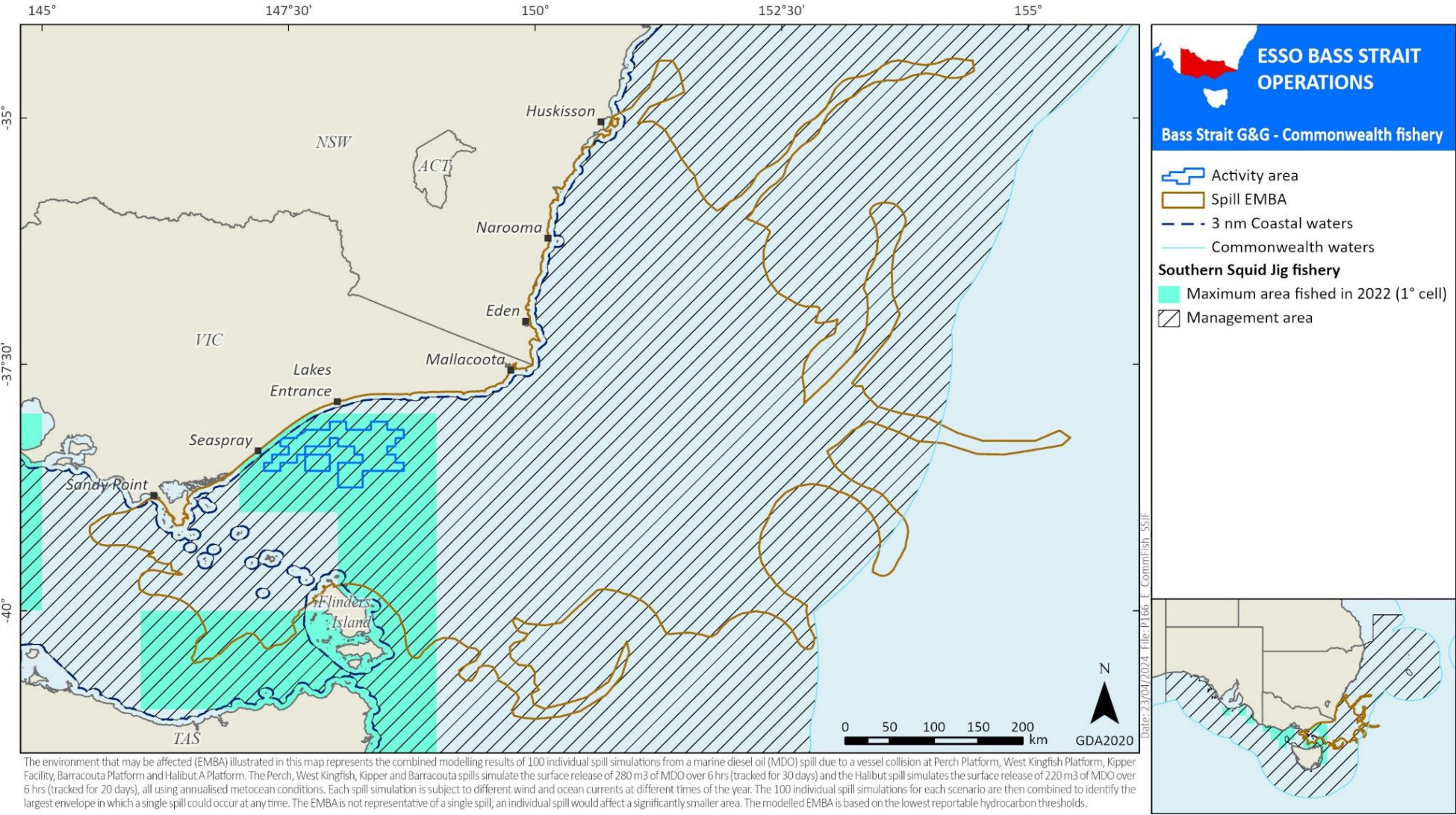


Figure 1-56 SSJF jurisdiction and fishing intensity (2020 season) intersected by the EMBA

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 1-57)	Blacklip abalone (<i>Haliotis rubra</i>) is the primary target, with greenlip abalone (<i>H. laevis</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.	46.2 %
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 1-58)	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.	45.8 %
Pipi Fishery (Figure 1-59)	Pipi (<i>donax deltooides</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. Papis 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.	54.4 %
Rock Lobster Fishery (Figure 1-58)	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.	45.8 %

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 1-60)	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.	46.7 %
Octopus Fishery (Figure 1-61)	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.	46.2 %
Wrasse Fishery (Figure 1-62)	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 Maori wrasse (<i>Ophthalmolepis lineolatus</i>)	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.	49.2 %

Victorian fishery	Target species	Description	Percentage overlap with the EMBA
Sea Urchin Fishery (Figure 1-63)	White sea urchin (<i>Heliocidaris erythrogramma</i>) black, long-spined sea urchin (<i>Centrostephanus rodgersii</i>)	<p>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.</p> <p>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.</p>	57.1 %
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%

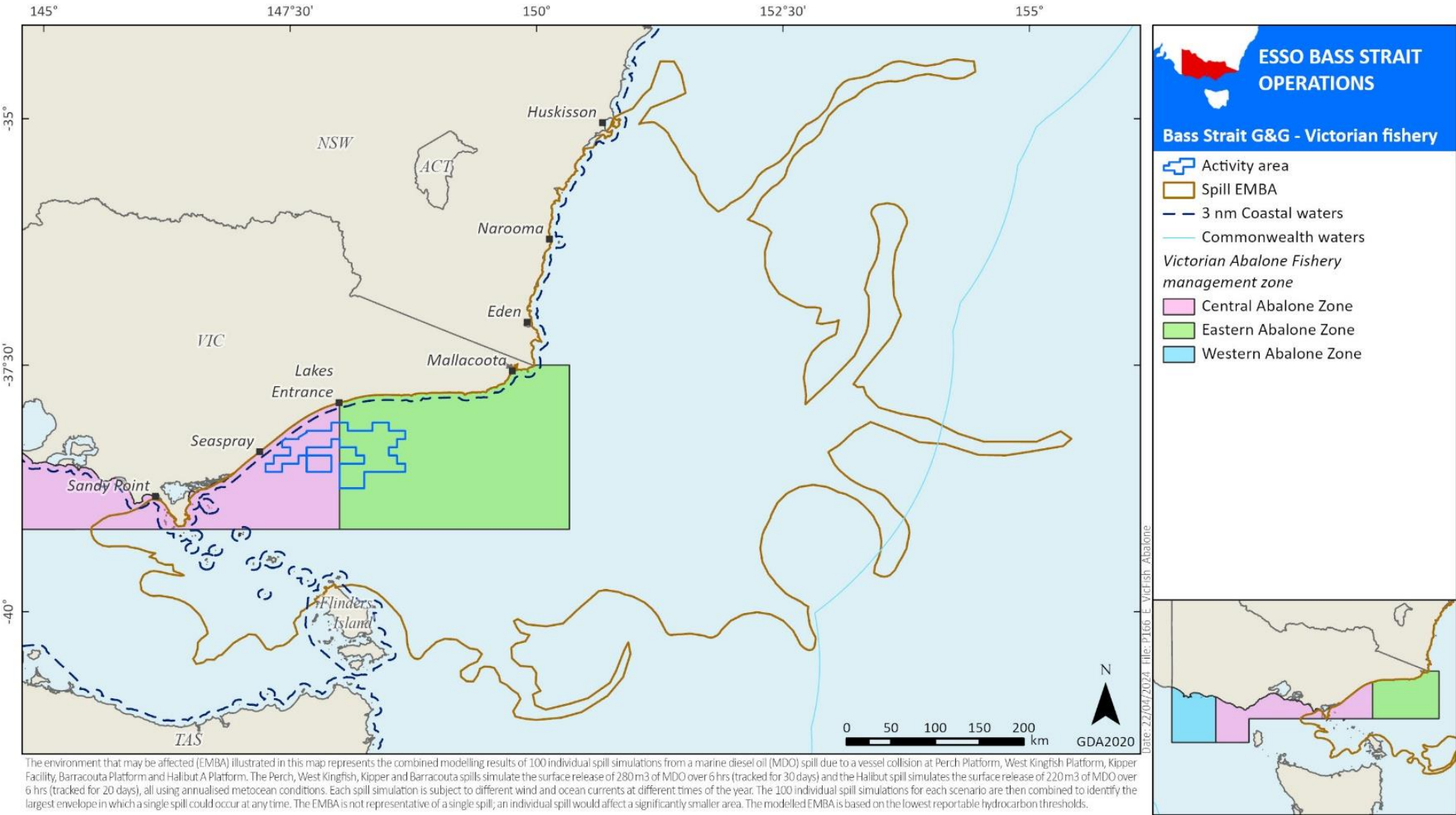


Figure 1-57 Victorian abalone fishery jurisdiction intersected by the EMBA

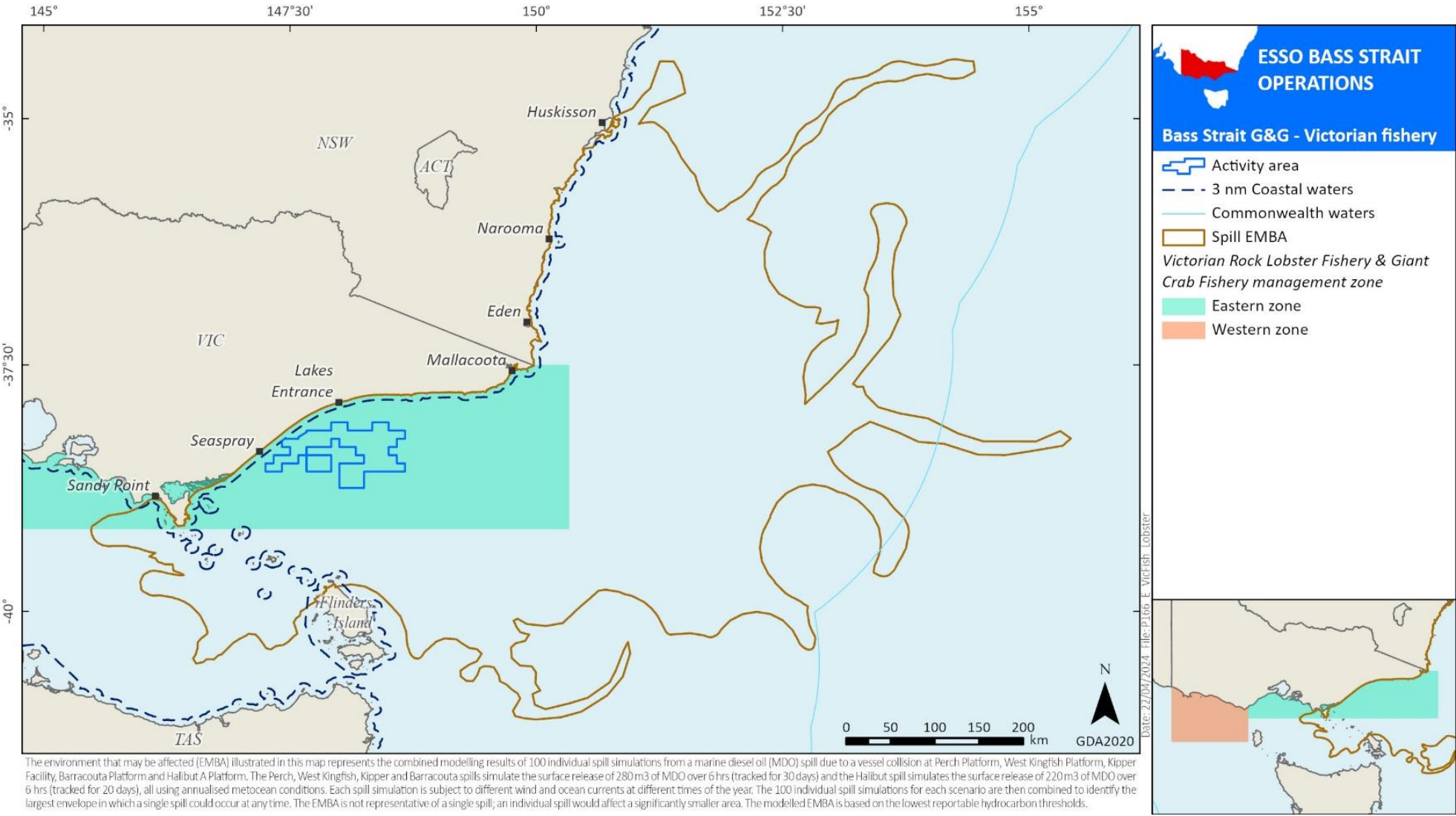


Figure 1-58 Victorian rock lobster and giant crab fishery jurisdiction intersected by the EMBA

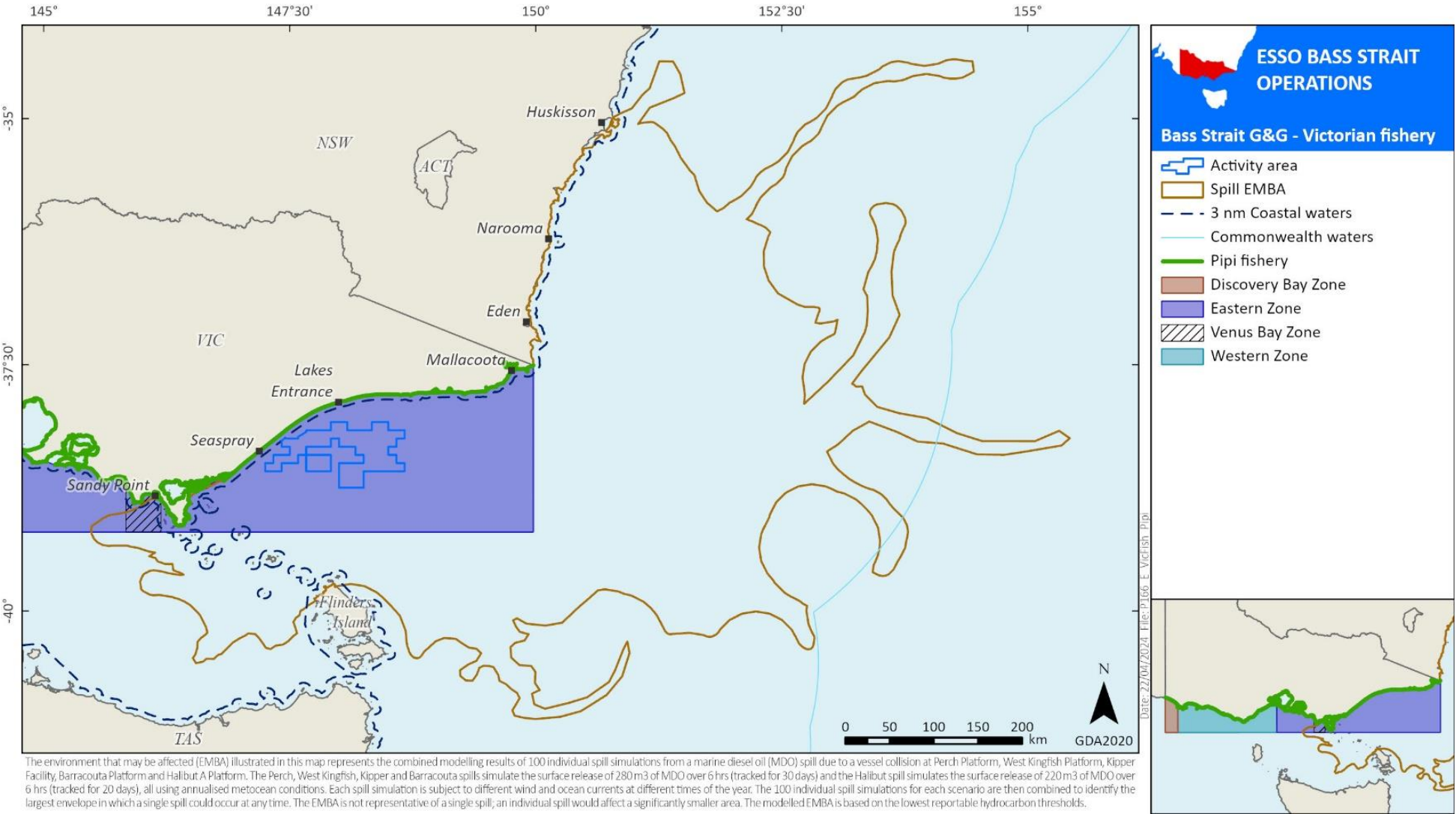


Figure 1-59 Victorian pipi fishery jurisdiction intersected by the EMBA

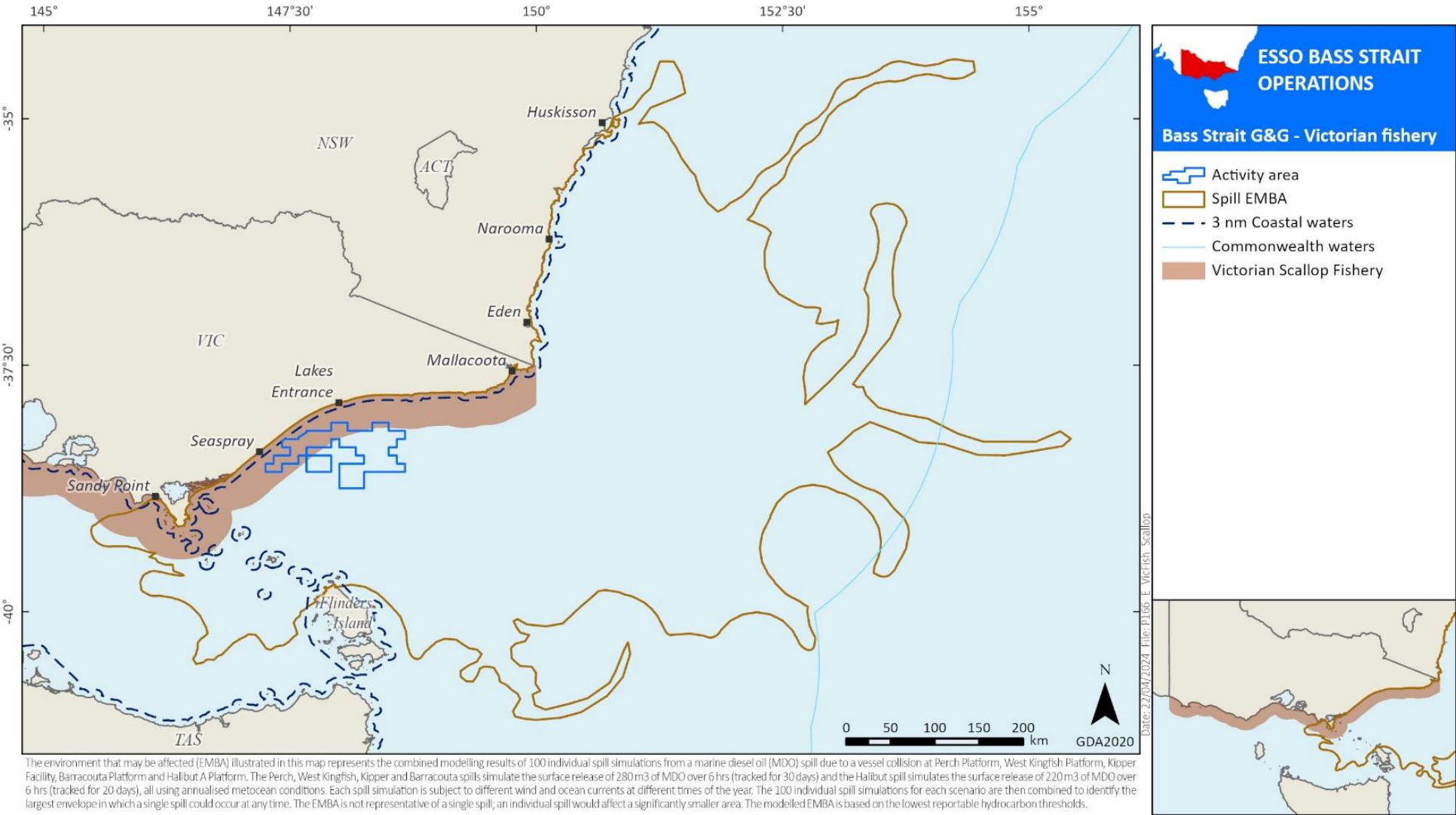


Figure 1-60 Victorian scallop fishery jurisdiction intersected by the EMBA

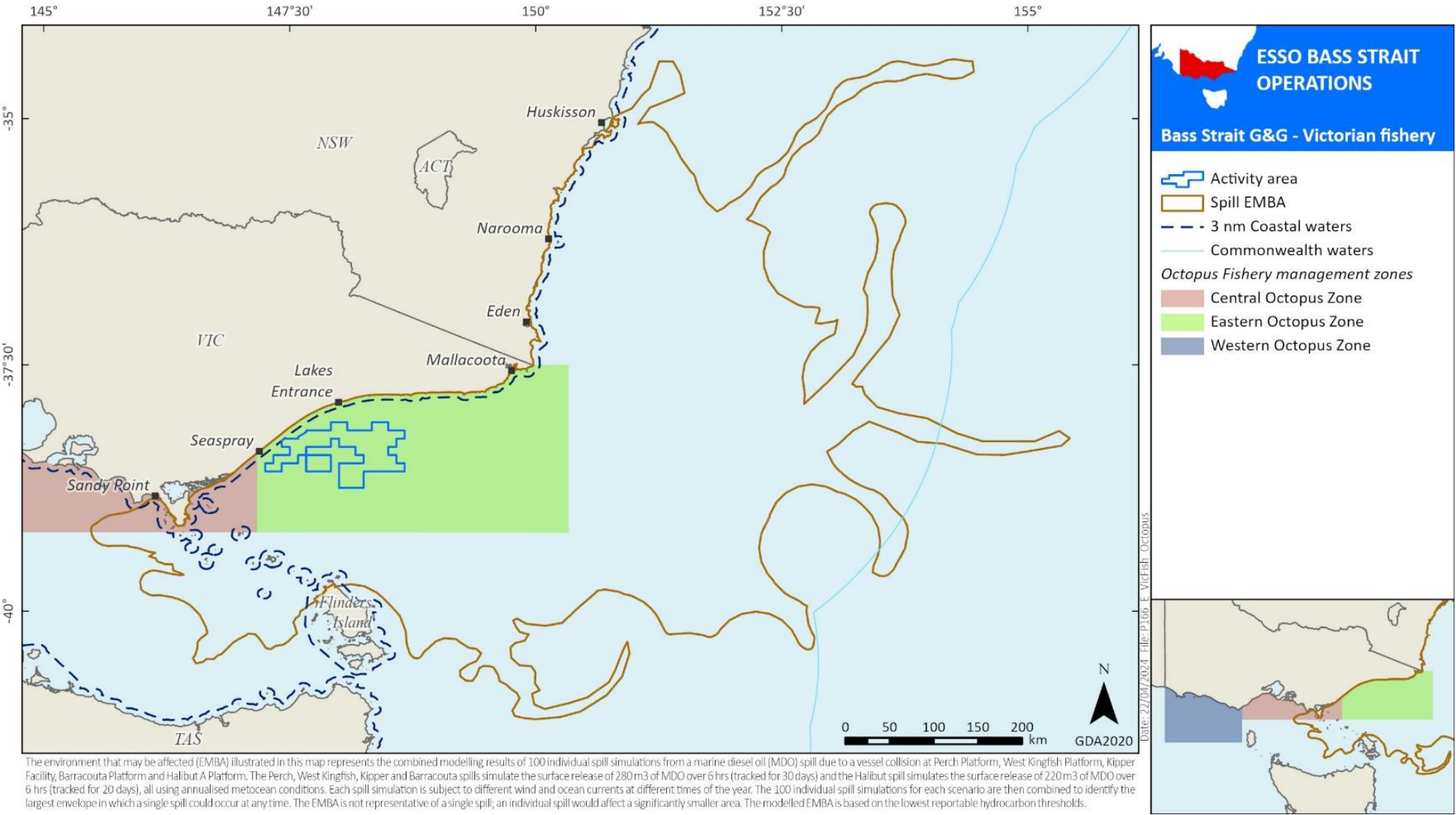


Figure 1-61 Victorian octopus fishery jurisdiction intersected by the EMBA

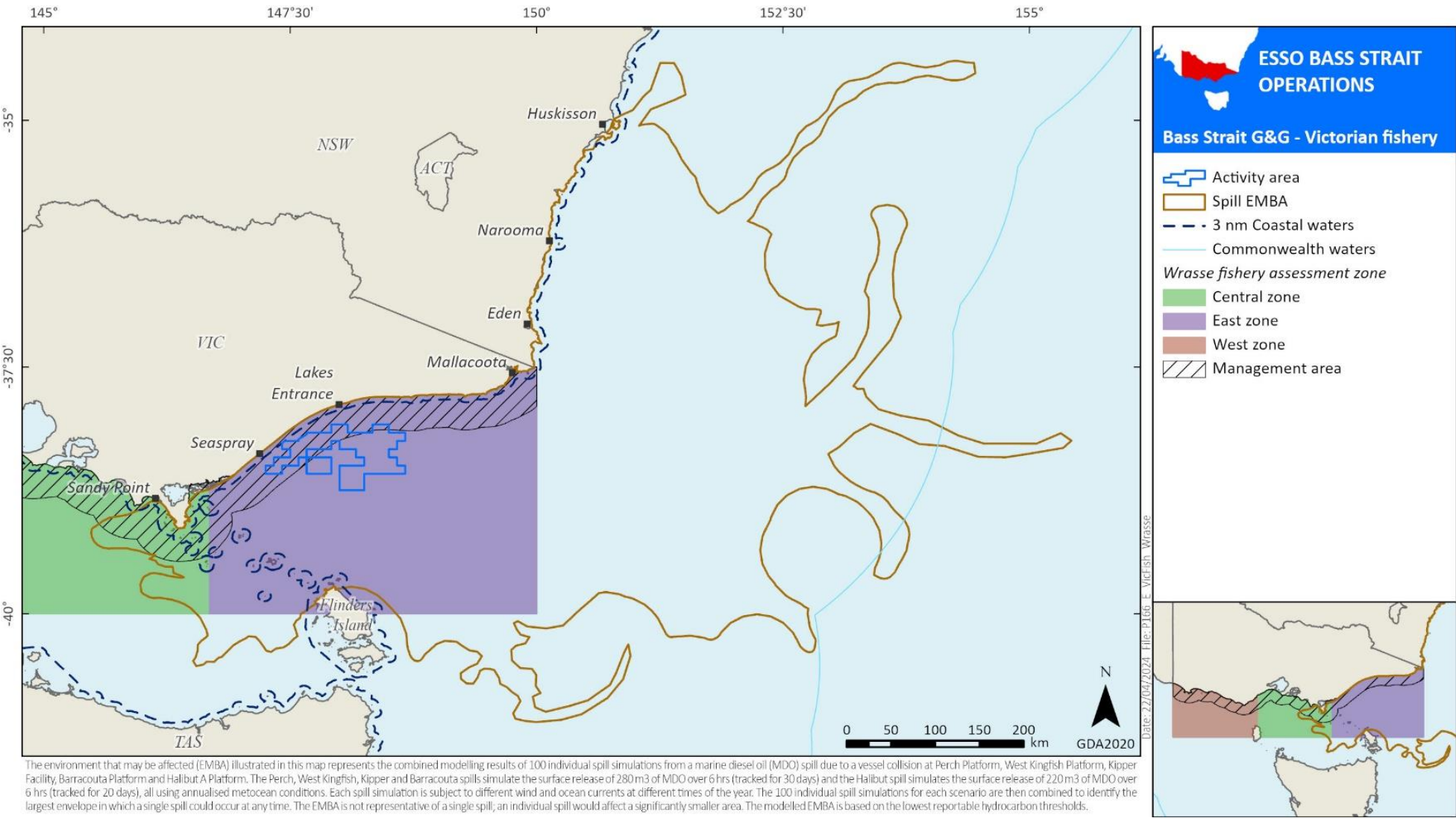


Figure 1-62 Victorian wrasse fishery jurisdiction intersected by the EMBA

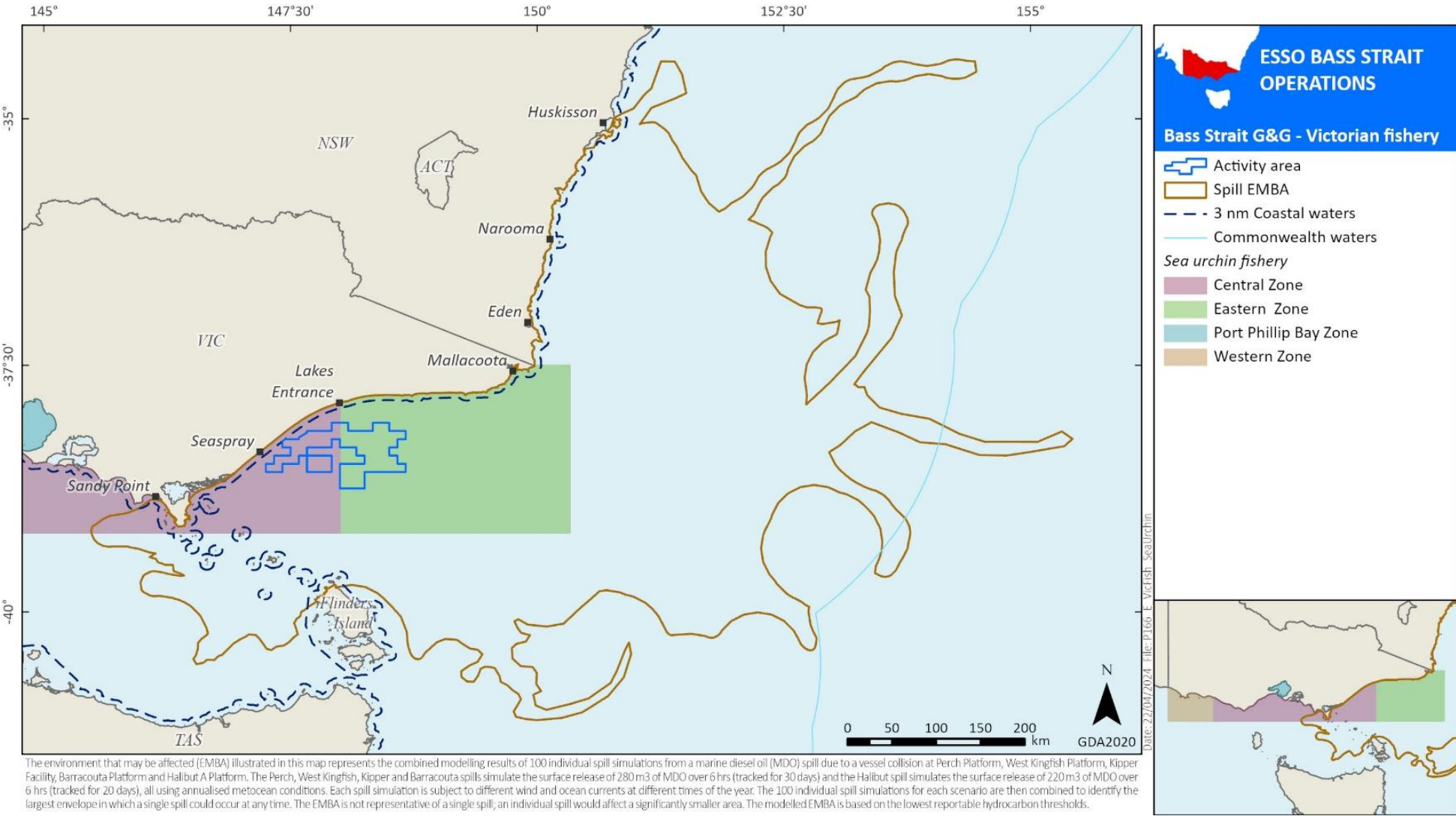


Figure 1-63 Victorian sea urchin fishery jurisdiction intersected by the EMBA

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 1-64)	Blacklip abalone (<i>Haliotis rubra</i>), (<i>H. laevigata</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. laevigata</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 1-65)	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 1-66)	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 1-66)	Giant crabs (<i>pseudocarcinus gigas</i>)	<p>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.</p> <p>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).</p>	35.3%
Scallop (Figure 1-66)	Commercial scallop (<i>Pecten fumatus</i>)	<p>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.</p> <p>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).</p>	35.3%
Commercial Dive (Figure 1-67)	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 1-68)	clams (<i>Veneruptis largillierti</i>), native oyster (<i>Ostrea angasi</i>), cockles (<i>Katelysia scalarina</i>) and wild Pacific	<p>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).</p> <p>Temperate climate bivalves generally have two spawning periods within a year following spring and autumnal peaks in phytoplankton production.</p>	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

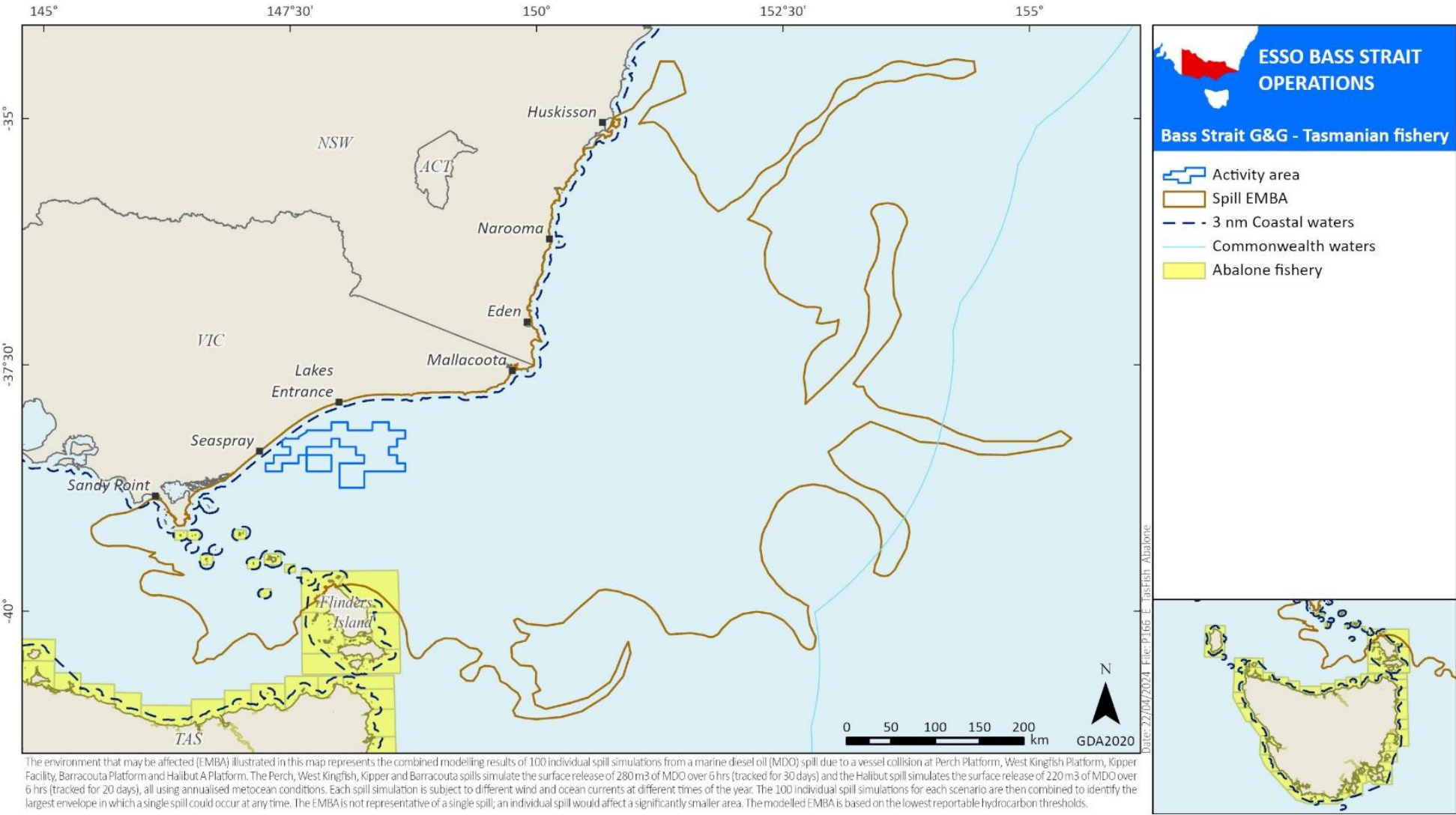


Figure 1-64 Tasmanian abalone fishery jurisdiction intersected by the EMBA

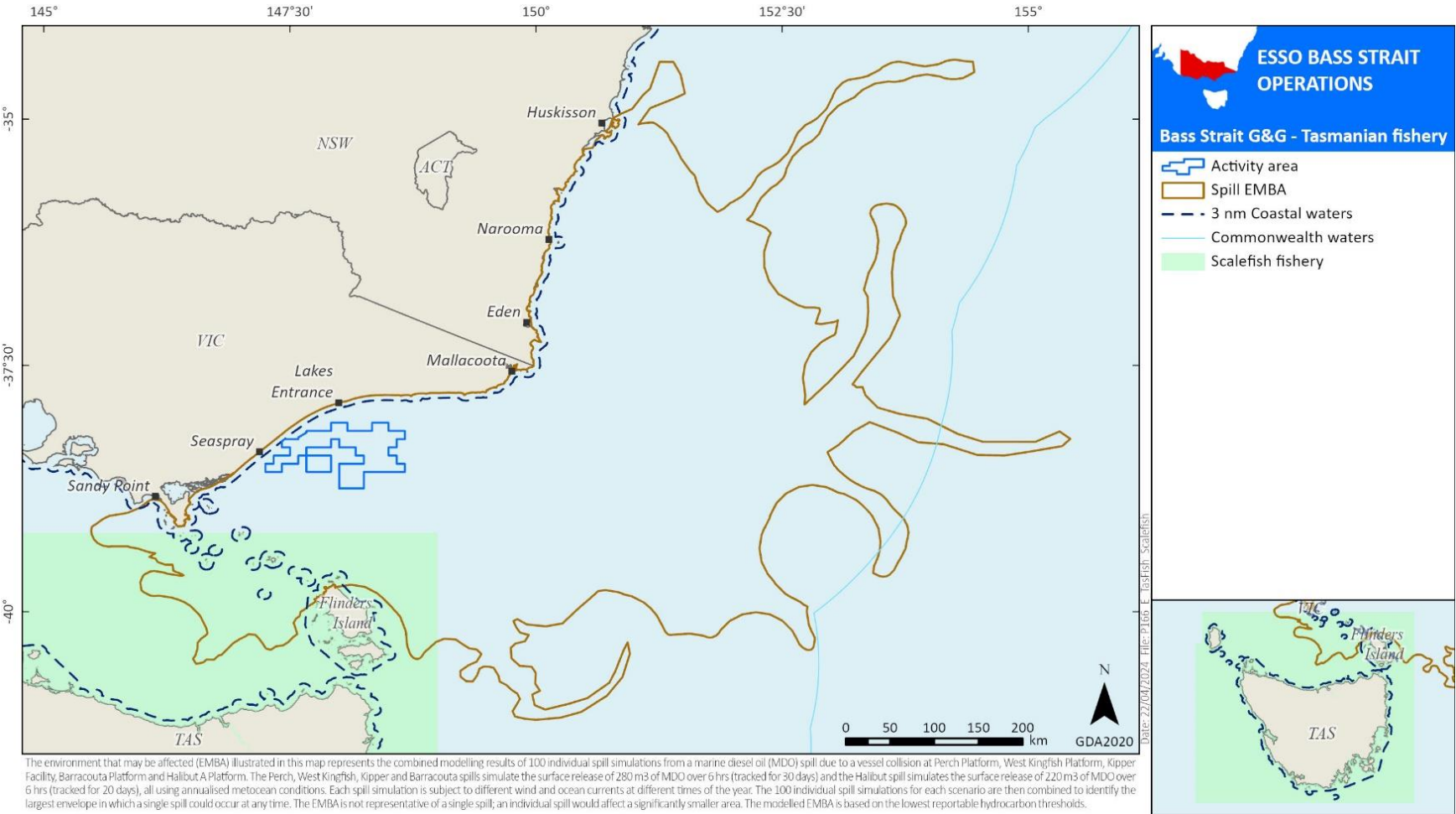


Figure 1-65 Tasmanian scalefish fishery jurisdiction intersected by the EMBA

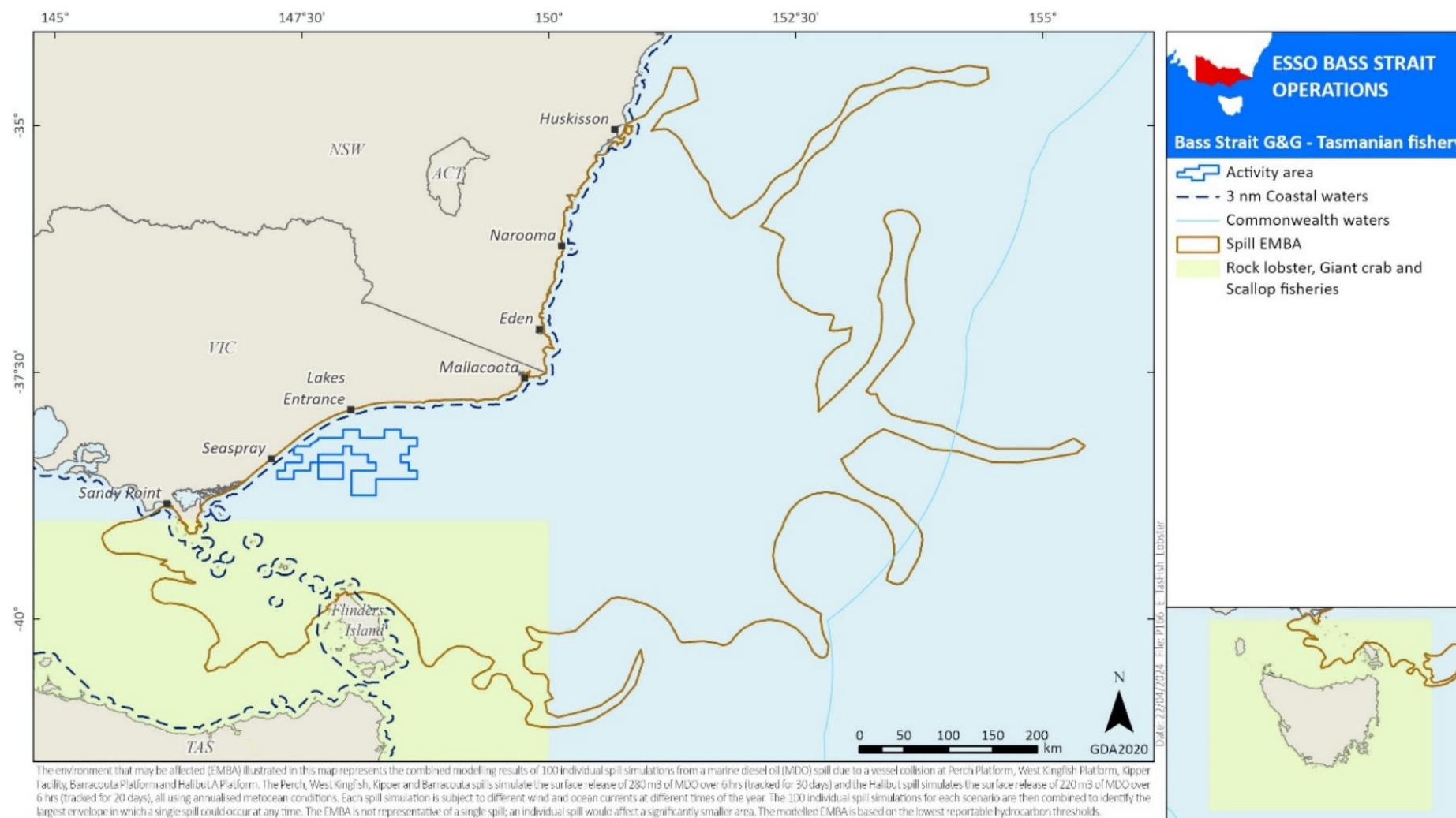


Figure 1-66 Rock lobster, giant crab and scallop fishery jurisdiction intersected by the EMBA



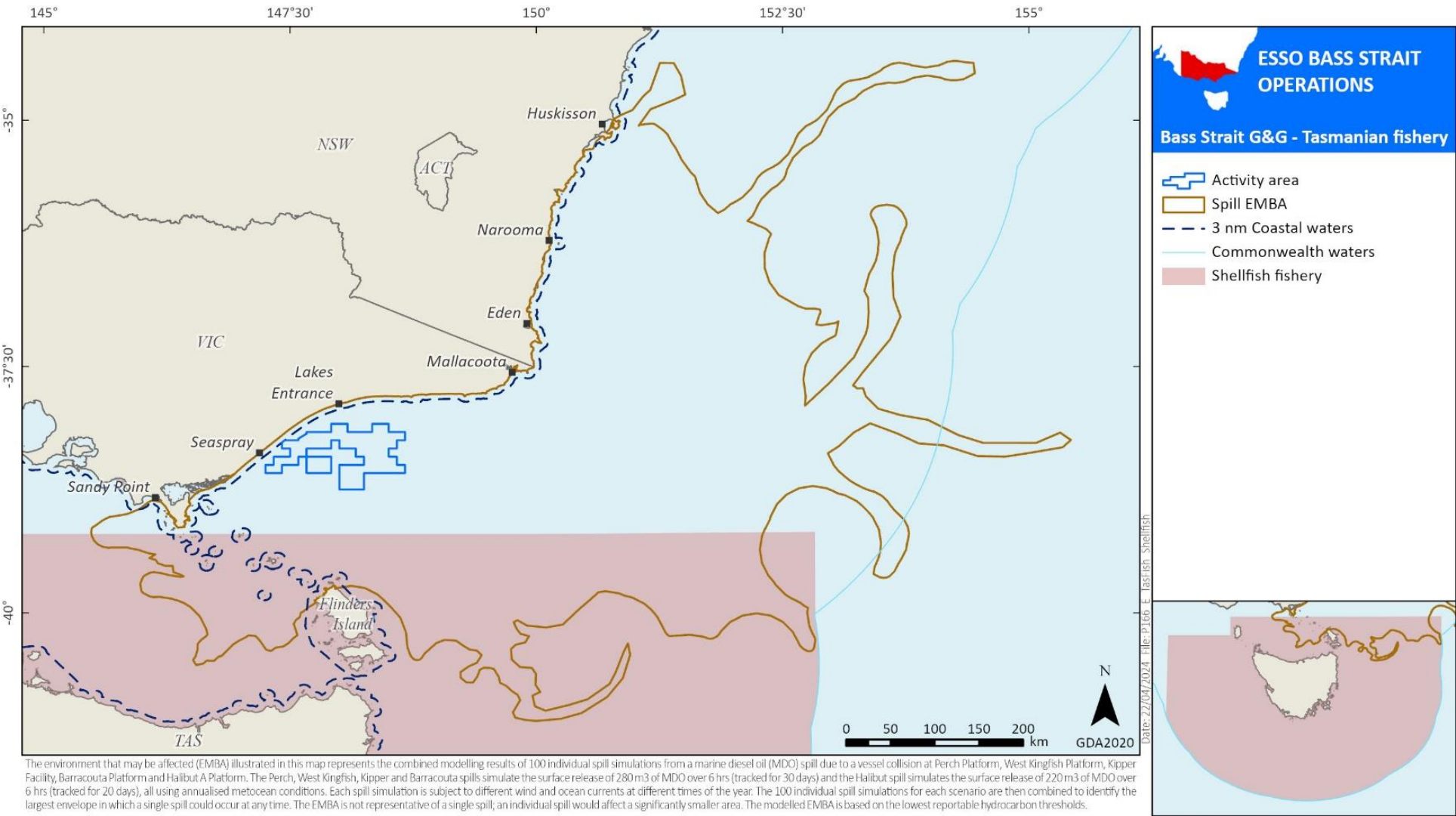


Figure 1-68 Tasmanian shellfish fishery jurisdiction intersected by the EMBA

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 Biddy (<i>Gerres subfasciatus</i>).	<p>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.</p> <p>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 biddy make up over 80% of the catch (DPI 2014).</p>	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	N/A – data unavailable.

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
		(generally October to May) and within each estuary is confined to specific times and areas. The majority of prawn catches are landed during the 'dark' of the moon, 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, sharks, bar cod, yellowfin bream, spanner crabs	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.
Ocean Trawl Fishery	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.	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	N/A – data unavailable.

Tasmanian Fishery	Target species	Description	Percentage overlap with the EMBA
	<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 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>Monacanthidae</i>), ocean perch (<i>Helicolenus barathri</i>, <i>Helicolenus percooides</i>), mirror dory (<i>Zenopsis nebulosus</i>)</p> <p>Sole spp. various (<i>Soleidae</i>), grey morwong (<i>Nemadactylus douglasii</i>), pink tilefish (<i>Branchiostegus wardi</i>), giant boarfish (<i>Paristioporus labiosus</i>), shark spp. various</p>	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.	
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 1-69; 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.

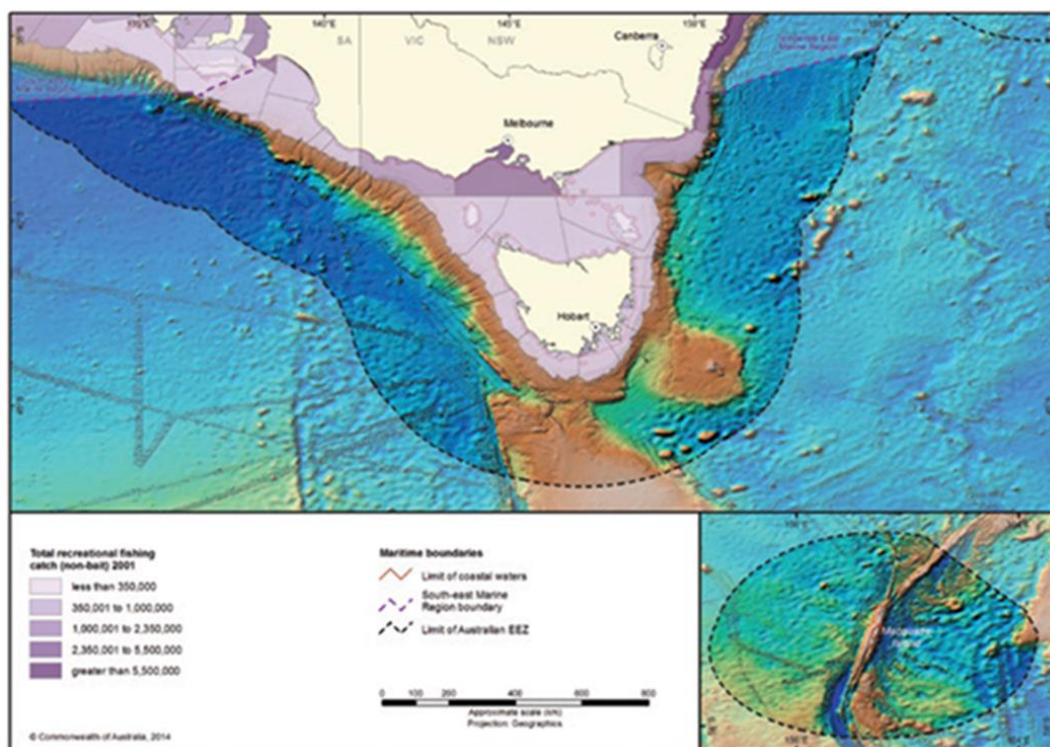


Figure 1-69 Recreational Fishing Catch in Temperate East (Commonwealth of Australia, 2015)

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 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 1-70). 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 (Geoscience Australia, 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 (Geoscience Australia, 2022).

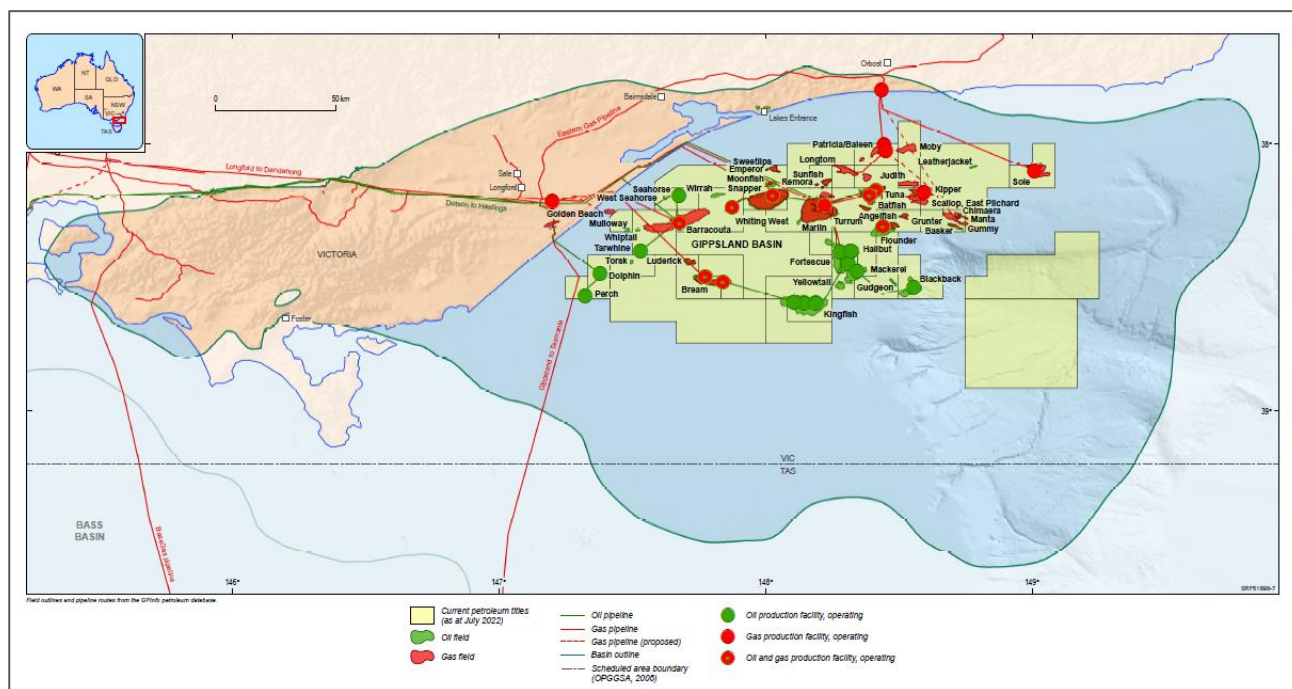


Figure 1-70 Petroleum exploration and production permits, oil and gas fields and petroleum production infrastructure in the Gippsland Basin (Geoscience Australia, 2022)

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
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

Title	Title Holder/s	Field
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	-
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

1.6.10 Renewable Energy

The EMBA overlaps Australia's first offshore declared areas available for renewable energy projects (Gippsland, Bass Strait, Illawarra and Hunter). The EMBA also overlaps the following projects that have been granted a feasibility license within the declared areas (Figure 1-71):

- FL-001: Blue Mackerel North Pty Ltd
- FL-002: High Sea Wind Pty Ltd
- FL-003: Gippsland Skies Pty Ltd
- FL-004: Orsted Offshore Australia 1 Pty Ltd
- FL-005: Kut-Wut Brataualung Pty Ltd
- FL-006: Star of the South Wind Farm Pty Ltd
- FL-007: Gippsland Dawn OWP Project Pty Ltd
- FL-008: Kent Offshore Wind Pty Ltd
- FL-009: Orsted Offshore Australia 1 Pty Ltd
- FL-010: Great Eastern Offshore Wind Farm Project Co Pty Ltd
- FL-011: Navigator North Project Pty Ltd
- FL-012: Iberdrola Australia OW 2 Pty Limited

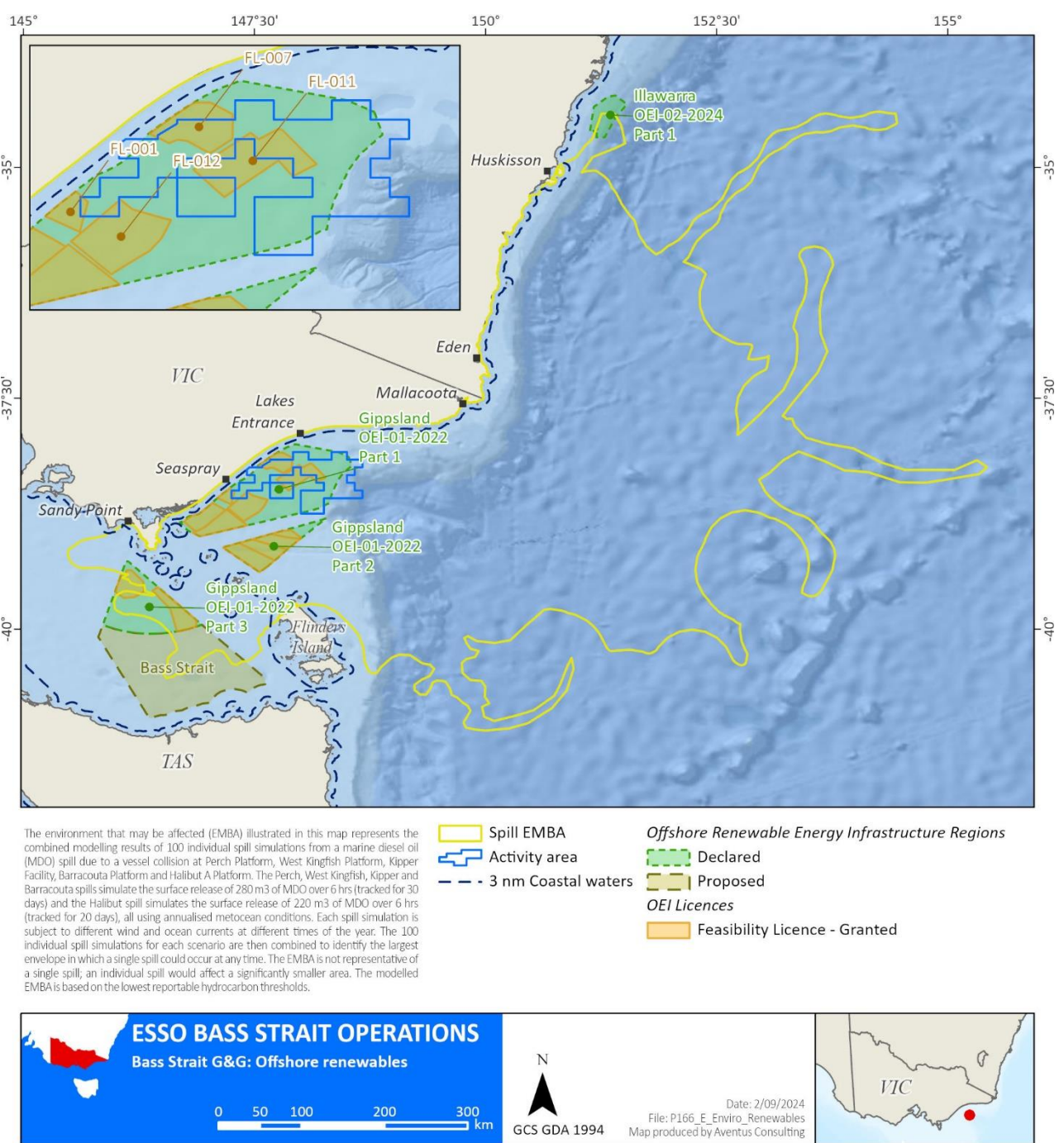


Figure 1-71 Offshore renewable energy infrastructure regions overlapped by the EMBA

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 1-72). 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 1-73 shows vessel traffic within the EMBA based on August 2023 AMSA data.

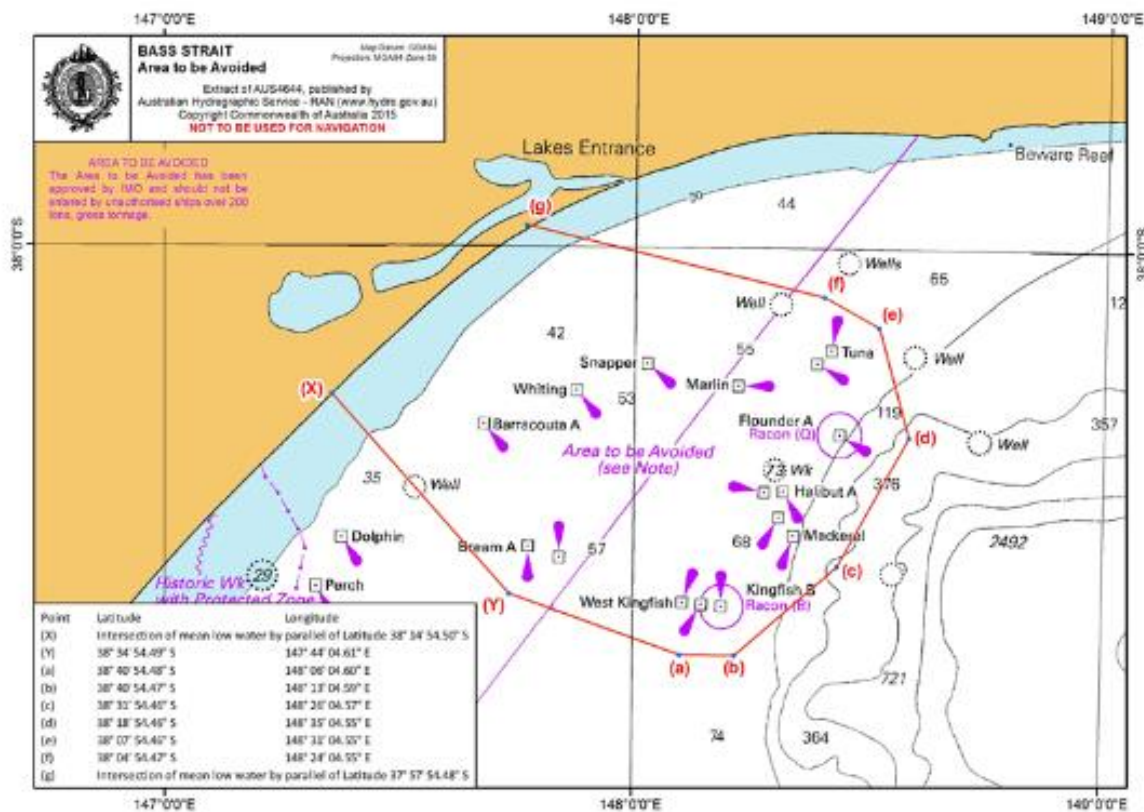


Figure 1-72 Bass Strait Area to be Avoided (ABF, 2019)

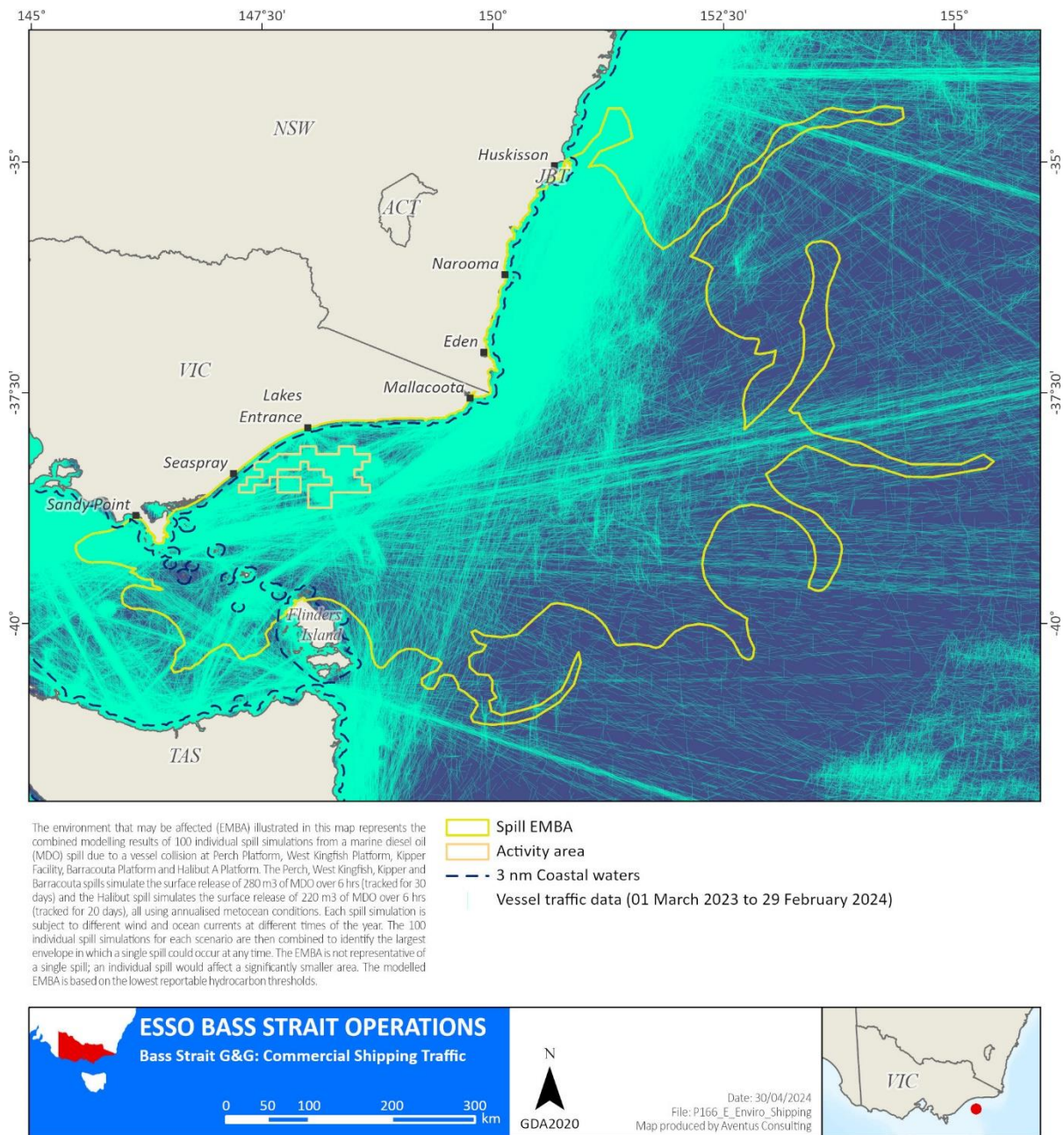


Figure 1-73 Vessel traffic within the EMBA based on August 2023 AMSA data

1.6.12 Defence

The Australian Defence Force conducts a range of training, research activities, and preparatory operations in Australian waters (Figure 1-74). 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.

Major defence bases within the EMBA include the multi-purpose wharf (naval operations) at Twofold Bay, Eden (NSW).

Primary training locations within the EMBA include the East Australia Exercise Area off the south coast of NSW.

Mine fields were laid in Australian waters during World War II. Post-war minefields were swept to remove mines and to make marine waters safe for maritime activities. There are three areas identified as dangerous due to unexploded ordnances, located south and east of Wilson's Promontory.

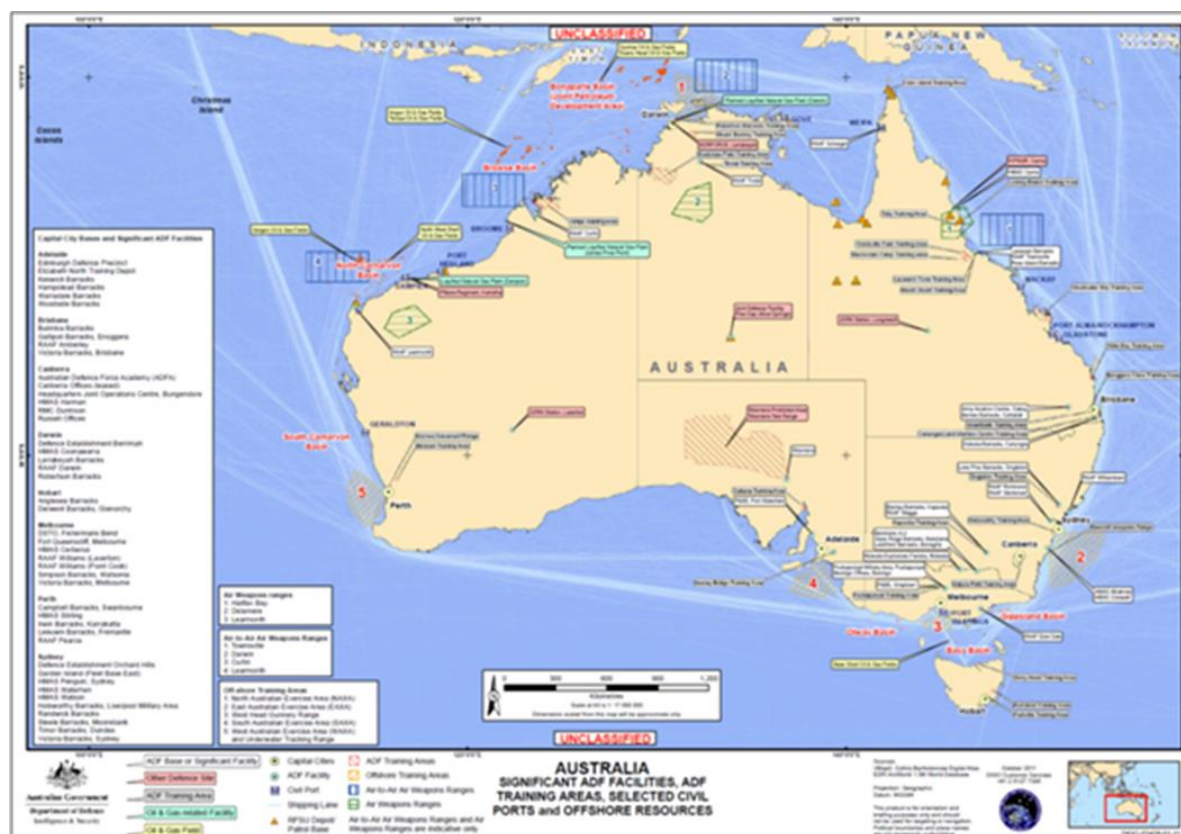


Figure 1-74 Significant Defence bases and facilities (Department of Defence, 2014)

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APPENDIX B: EPBC Act Listed Species in the Activity area and EMBA

Table B-1 EPBC Act listed fish (bony) species or species habitat that may occur within the activity area and EMBA.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
Fish							
<i>Acentronura tentaculata</i>	Shortpouch pygmy pipehorse			✓	-	-	MO
<i>Cosmocampus howensis</i>	Lord Howe pipefish			✓	-	-	MO
<i>Epinephelus daemeli</i>	Black rockcod	V			-	-	LO
<i>Festucalex cinctus</i>	Girdled pipefish			✓	-	-	MO
<i>Filicampus tigris</i>	Tiger pipefish			✓	-	-	MO
<i>Galaxiella pusilla</i>	Eastern dwarf galaxias	E			-	-	KO
<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 minotaur</i>	Bullneck seahorse			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	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>Hypsognathus rostratus</i>	Knifefnout 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>Macquaria australasica</i>	Macquarie perch	E			-	-	MO
<i>Maroubra perserrata</i>	Sawtooth pipefish			✓	-	-	MO
<i>Mitotichthys mollisoni</i>	Mollison's pipefish			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
<i>Mitotichthys semistriatus</i>	Halfbanded pipefish			✓	-	-	MO
<i>Mitotichthys tuckeri</i>	Tucker's pipefish			✓	-	-	MO
<i>Mordacia praecox</i>	Non-parasitic lamprey	E			-	-	LO
<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 robustus</i>	Robust pipehorse			✓	-	-	MO
<i>Solegnathus spinosissimus</i>	Spiny pipe horse			✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
<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
<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		<u>Type of Presence:</u> MO Species or species habitat may occur within the area					

Scientific name		Common name		Threatened species	Migratory species	Listed marine species	BIA		Type of presence
							Activity area	EMBA	
E	Endangered	LO	Species or species habitat likely to occur within the area						
CD	Conservation Dependant	KO	Species or species habitat known to occur within the area						

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

Table B-2 EPBC Act listed fish (cartilaginous) species or species habitat that may occur within the activity area and EMBA.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
Sharks and Rays							
<i>Carcharias Taurus</i> (east coast population)	Grey nurse shark (east coast population)	CE	✓		-	b,f	MO
<i>Carcharodon carcharias</i>	Great white shark	V	✓		b	b,f	BKO
<i>Centrophorus harrissoni</i>	Harrisson's dogfish	CD			-	-	LO
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark		✓		-	-	MO
<i>Centrophorus uyato</i>	Little gulper shark	CD			-	-	LO
<i>Galeorhinus galeus</i>	School shark	CD			-	-	LO
<i>Isurus oxyrinchus</i>	Shortfin mako		✓		-	-	LO
<i>Lamna nasus</i>	Porbeagle		✓		-	-	LO
<i>Manta birostris</i>	Giant manta ray		✓		-	-	KO
<i>Rhincodon typus</i>	Whale shark	V	✓		-	-	MO
<i>Sphyrna lewini</i>	Scalloped hammerhead	CD			-	-	MO
<u>Threatened Species:</u>	<u>Type of Presence:</u>			<u>Biologically Important Areas:</u>			
V Vulnerable	MO Species or species habitat may occur within the area			b Breeding			
CE Critically Endangered	LO Species or species habitat likely to occur within the area			f Foraging			
CD Conservation Dependant	KO Species or species habitat known to occur within the area			a Aggregation			

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

Table B-3 EPBC Act listed seabird and shorebird species or species habitat that may occur within the activity area 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 activity area and EMBA respectively.

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	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	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Thalassarche bulleri platei</i>	Northern Buller's albatross	V			-	-	MO
<i>Thalassarche cauta cauta</i>	Shy albatross	E	✓ (M)	✓	f	f	FLO
<i>Thalassarche causta steadi</i>	White-capped albatross	V	✓ (M)	✓	-	f	FKO
<i>Thalassarche chlororhynchos bassi</i> (<i>Thalassarche carteri</i>)	Indian yellow-nosed albatross	V	✓ (M)	✓	f	f	LO
<i>Thalassarche chrysostoma</i>	Grey-headed albatross	E	✓ (M)	✓	-	-	MO
<i>Thalassarche eremita</i>	Chatham albatross	E	✓ (M)	✓	-	-	FMO
<i>Thalassarche impavida</i>	Campbell albatross	V	✓ (M)	✓	f	f	FLO
<i>Thalassarche melanophris</i>	Black-browed albatross	V	✓ (M)	✓	f	f	FLO
<i>Thalassarche salvini</i>	Salvin's albatross	V	✓ (M)	✓	-	-	FLO
Petrels							
<i>Fregetta grallaria grallaria</i>	White-bellied storm-petrel (Tasman Sea)	V			f	b,f	LO
<i>Halobaena caerulea</i>	Blue petrel	V		✓	-	-	MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Macronectes giganteus</i>	Southern giant petrel	E	✓ (M)	✓	-	f	MO
<i>Macronectes halli</i>	Northern giant petrel	V	✓ (M)	✓	-	f	FLO
<i>Oceanites oceanites</i>	Wilsos storm petrel				-	-	MKO
<i>Pelagodroma marina</i>	White-faced storm petrel			✓	f	b,f	BKO
<i>Pelecanoides urinatrix</i>	Common diving petrel			✓	f	b,f	BKO
<i>Procellaria parkinsoni</i>	Black petrel				-	-	FLO
<i>Pterodroma cervicalis</i>	White-necked petrel			✓	-	-	MO
<i>Pterodroma heraldica</i>	Herald petrel	CE			-	-	LO
<i>Pterodroma leucoptera leucoptera</i>	Gould's petrel	E			-	-	MO
<i>Pterodroma macroptera</i>	Great-winged petrel				-	-	FLO
<i>Pterodroma mollis</i>	Soft-plumaged petrel	V		✓	-	f	MO
<i>Pterodromoa neglecta neglecta</i>	Kermadec petrel (western)	V			-	f	FMO
Shearwaters							

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Ardenna carneipes</i>	Flesh-footed shearwater		✓ (M)	✓		f	FLO
<i>Ardenna grisea</i>	Sooty shearwater	V	✓ (M)	✓	-	b,f	MO
<i>Ardenna pacifica</i>	Wedge-tailed shearwater		✓ (M)	✓	-	b	BKO
<i>Ardenna tenuirostris</i>	Short-tailed shearwater		✓ (M)	✓	f	b,f	FKO
<i>Calonectris leucomelas</i>	Streaked shearwater		✓ (M)		-	-	KO
Shorebirds and other seabirds							
<i>Actitis hypoleucos</i>	Common sandpiper		✓ (M)	✓	-	-	MO
<i>Anous stolidus</i>	Common noddy		✓ (M)	✓	-	b,f	LO
<i>Anthochaera phrygia</i>	Regent honeyeater	CE					KO
<i>Apus pacificus</i>	Fork-tailed swift		✓ (M)	✓	-	-	LO
<i>Aquila audax fleayi</i>	Tasmanian wedge-tailed eagle	E			-	-	LO
<i>Arenaria interpres</i>	Ruddy turnstone		✓ (W)	✓	-	-	RKO
<i>Botaurus poiciloptilus</i>	Australasian bittern	E			-	-	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Bubulcus ibis</i>	Cattle egret			✓	-	-	MO
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	V	✓ (W)	✓	-	-	MO
<i>Calidris alba</i>	Sanderling		✓ (W)	✓	-	-	RKO
<i>Calidris canutus</i>	Red knot	V	✓ (W)	✓	-	-	MO
<i>Calidris ferruginea</i>	Curlew sandpiper	CE	✓ (W)	✓	-	-	KO
<i>Calidris melanotos</i>	Pectoral sandpiper		✓ (W)	✓	-	-	MO
<i>Calidris pugnax</i> (<i>Philmachus pugnax</i>)	Ruff		✓ (W)	✓	-	-	RKO
<i>Calidris ruficollis</i>	Red-necked stint		✓ (W)	✓	-	-	RKO
<i>Calidris tenuirostris</i>	Great knot	CE	✓ (W)	✓	-	-	RKO
<i>Callocephalon fimbriatum</i>	Gang-gang cockatoo	E			-	-	KO
<i>Calyptorhynchus lathami lathami</i>	South-eastern glossy black-cockatoo	V			-	-	KO
<i>Charadrius bicinctus</i>	Double-banded plover		✓ (W)	✓	-	-	RKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Charadrius leschenaultii</i>	Greater sand plover	V	✓ (W)	✓	-	-	KO
<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)	✓	-	-	FKO
<i>Chroicocephalus novaehollandiae</i>	Silver gull			✓	-	-	BKO
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper	V			-	-	KO
<i>Cuculus optatus</i>	Oriental cuckoo		✓ (T)		-	-	KO
<i>Dasyornis brachypterus</i>	Eastern bristlebird	E			-	-	KO
<i>Eudyptula minor</i>	Little penguin			✓	-	b,f	BKO
<i>Falco hypoleucos</i>	Grey falcon	V					LO
<i>Fregata ariel</i>	Lesser frigatebird		✓ (M)	✓	-	-	LO
<i>Fregata minor</i>	Great frigatebird		✓ (M)	✓	-	-	MO
<i>Gallinago hardwickii</i>	Latham's snipe	V	✓ (W)	✓	-	-	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Gallinago megala</i>	Swinhoe's snipe		✓ (W)	✓	-	-	RLO
<i>Gallinago stenura</i>	Pin-tailed snipe		✓ (W)	✓	-	-	RKO
<i>Grantiella picta</i>	Painted Honeyeater	V					KO
<i>Haliaeetus leucogaster</i>	White-bellied sea eagle			✓	-	-	BKO
<i>Himantopus himantopus</i>	Black-winged stilt			✓	-	-	RKO
<i>Hirundapus caudacutus</i>	White-throated needletail	V	✓ (T)	✓	-	-	RKO
<i>Hydroprogne caspia</i>	Caspian tern		✓ (M)	✓	-	-	BKO
<i>Larus pacificus</i>	Pacific gull			✓	-	-	BKO
<i>Lathamus discolor</i>	Swift Parrot	CE		✓	-	-	KO
<i>Limicola falcinellus</i>	Broad-billed Sandpiper		✓ (W)	✓	-	-	FKO
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	V	✓ (W)	✓	-	-	MO
<i>Limosa lapponica</i>	Bar-tailed godwit		✓ (W)	✓	-	-	KO
<i>Limosa lapponica baueri</i>	Nunivak bar-tailed godwit	E			-	-	KO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Limosa limosa</i>	Black-tailed godwit	E	✓ (W)	✓	-	-	RKO
<i>Merops ornatus</i>	Rainbow Bee-eater			✓	-	-	MO
<i>Monarcha melanopsis</i>	Black-faced Monarch			✓	-	-	KO
<i>Motacilla flava</i>	Yellow Wagtail		✓ (T)	✓	-	-	MO
<i>Myiagra cyanoleuca</i>	Satin Flycatcher			✓	-	-	KO
<i>Neophema chrysogaster</i>	Orange-bellied parrot	CE		✓	-	-	KO
<i>Neophema chrysostoma</i>	Blue-winged Parrot	V		✓	-	-	KO
<i>Numenius madagascariensis</i>	Eastern curlew	CE	✓ (W)	✓	-	-	MO
<i>Numenius minutus</i>	Little curlew		✓ (W)	✓	-	-	RLO
<i>Numenius phaeopus</i>	Whimbrel		✓ (W)	✓	-	-	RKO
<i>Onychoprion fuscatus</i>	Sooty tern			✓	-	b,f	BKO
<i>Pachyptila turtur</i>	Fairy prion			✓	-	-	MO
<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
					Activity Area	EMBA	
<i>Pandion haliaetus</i>	Osprey		✓ (W)	✓	-	-	KO
<i>Phaethon lepturus</i>	White-tailed tropicbird		✓ (M)	✓	-	-	KO
<i>Phalacrocorax fuscescens</i>	Black-faced cormorant			✓	-	f	BKO
<i>Pluvialis fulva</i>	Pacific golden plover		✓ (W)	✓	-	-	RKO
<i>Pluvialis squatarola</i>	Grey plover	V	✓ (W)	✓	-	-	RKO
<i>Recurvirostra novaehollandiae</i>	Red-necked avocet			✓	-	-	RKO
<i>Rhipidura rufifrons</i>	Rufous fantail			✓	-	-	KO
<i>Rostratula australis</i>	Australian painted snipe	E		✓	-	-	KO
<i>Stagonopleura guttata</i>	Diamond firetail	V					KO
<i>Stercorarius antarcticus</i>	Brown skua			✓	-	-	MO
<i>Sterna bergii</i>	Crested tern		✓ (W)	✓	-	b,f	BKO
<i>Sterna striata</i>	White-fronted tern			✓	-	-	FMO
<i>Sternula albifrons</i>	Little tern		✓ (M)	✓	-	-	BKO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<i>Sternula nereis</i>	Fairy tern			✓	-	-	BKO
<i>Sternula nereis nereis</i>	Australian fairy tern	V			-	-	FLO
<i>Symposiachrus trivirgatus</i>	Spectacled Monarch			✓	-	-	KO
<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 brevipes</i>	Grey-tailed tattler		✓ (W)	✓	-	-	RKO
<i>Tringa glareola</i>	Wood sandpiper		✓ (W)	✓	-	-	KO
<i>Tringa nebularia</i>	Common greenshank	E	✓ (W)	✓	-	-	KO
<i>Tringa stagnatilis</i>	Marsh sandpiper		✓ (W)	✓	-	-	RKO
<i>Xenus cinereus</i>	Terek sandpiper	V	✓ (W)	✓	-	-	KO
Threatened Species: V Vulnerable	Type of Presence: MO Species or species habitat may occur within the area						

Scientific name		Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
						Activity Area	EMBA	
E	Endangered	LO	Species or species habitat likely to occur within the area					
CE	Critically Endangered	KO	Species or species habitat known to occur within the area					
Biologically Important Areas:		FMO	foraging, feeding or related behaviour may occur within the area					
b	Breeding	FLO	foraging, feeding or related behaviour likely to occur within the area					
f	Foraging	FKO	foraging, feeding or related behaviour known to occur within the area					
Migratory Species:		BKO	Breeding known to occur within the area					
M	Marine	RMO	Roosting may occur within the area					
W	Wetland	RLO	Roosting likely to occur within the area					
T	Terrestrial	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					

Table B-4 EPBC Act listed cetacean or species habitat that may occur within the activity area and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	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 breviceuda</i>	Pygmy blue whale	E	✓		,f	f	LO
<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**	KO
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<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
<i>Kogia sima</i>	Dwarf sperm whale						MO
<i>Megaptera novaeangliae</i>	Humpback whale		✓			m	KO
<i>Mesoplodon bowdoini</i>	Andrew's beaked whale						MO
<i>Mesoplodon densirostris</i>	Blainville's beaked whale						MO
<i>Mesoplodon ginkgodens</i>	Ginkgo-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>Peponocephala electra</i>	Melon-headed whale						MO

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity Area	EMBA	
<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
<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>Steno bredanensis</i>	Rough-toothed dolphin						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
					Activity Area	EMBA	
<i>Tursiops truncatus s. str.</i>	Bottlenose dolphin						MO
<p><u>Threatened Species:</u></p> <p>V Vulnerable MO Species or species habitat may occur within the area</p> <p>E Endangered LO Species or species habitat likely to occur within the area</p> <p><u>Biologically Important Areas:</u></p> <p>b breeding KO Species or species habitat known to occur within the area</p> <p>c calving FLO Foraging, feeding or related behaviour likely to occur within the area</p> <p>f foraging FKO Foraging, feeding or related behaviour known to occur within the area</p> <p>m migration BKO Breeding known to occur within the area</p> <p>d distribution</p> <p>kcr known core range</p>							

Note: Shaded species denotes that they occur in both the activity area and the EMBA. ** = the SRW BIA data has undergone revision (mid 2023) and was not detected by the PMST, this information was extracted from the National Conservations Values Atlas (see [Appendix A](#), Section 2.3.1.6)

Table B-5 EPBC Act listed pinnipeds or species habitat that may occur within the activity area and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
<i>Arctocephalus forsteri</i>	New Zealand fur seal			✓	-	-	MO
<i>Arctocephalus pusillus</i>	Australian fur seal			✓	-	-	MO
<u>Type of Presence:</u> MO Species or species habitat may occur within the area BKO Breeding known to occur within the area							

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

Table B-6 EPBC Act listed sirenian or species habitat that may occur within activity area and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
<i>Dugong dugon</i>	Dugong		✓	✓	-	-	MO
<u>Type of Presence:</u> MO Species or species habitat may occur within the area							

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

Table B-7 EPBC Act listed marine reptiles or species habitat that may occur within the Potentially activity area and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
Turtles							
<i>Caretta caretta</i>	Loggerhead turtle	E	✓	✓	-	-	LO
<i>Chelonia mydas</i>	Green turtle	V	✓	✓	-	-	MO
<i>Dermochelys coriacea</i>	Leatherback turtle	E	✓	✓	-	-	KO
<i>Eretmochelys imbricata</i>	Hawksbill turtle	V	✓	✓	-	-	FKO
<i>Natator depressus</i>	Flatback turtle	V	✓	✓	-	-	FKO
<u>Threatened Species:</u>	<u>Type of Presence:</u>						
V Vulnerable	FKO Foraging, feeding or related behaviour known to occur within the area						
E Endangered	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 activity area and the EMBA.

Table B-8 EPBC Act listed Nephtheidae or species habitat that may occur within activity area and EMBA

Scientific name	Common name	Threatened species	Migratory species	Listed marine species	BIA		Type of presence
					Activity area	EMBA	
<i>Dendronephthya australis</i>	Cauliflower soft coral	E		✓	-	-	KO
<u>Type of Presence:</u> KO Species or species habitat known to occur within the area							

Note: Shaded species denotes that they occur in both the activity area and the EMBA.

APPENDIX C: EPBC Act Protected Matters Report – Activity Area



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 02-Oct-2024

[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:	44
Listed Migratory Species:	45

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	63
Whales and Other Cetaceans:	29
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:	56
Key Ecological Features (Marine):	1
Biologically Important Areas:	12
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche 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

Scientific Name	Threatened Category	Presence Text
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
FISH		
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 may 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
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Centrophorus harrissoni Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish [68444]	Conservation Dependent	Species or species habitat likely to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat 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

Scientific Name	Threatened Category	Presence Text
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Physeter macrocephalus Sperm Whale [59]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
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
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

Scientific Name	Threatened Category	Presence Text
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
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptile		

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour 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
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
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Aurora Green Offshore Wind Farm Preliminary Surveys	2024/09968		Referral Decision
Blue Mackerel North Offshore Wind Farm Marine Surveys	2024/09934		Referral Decision
Blue Marlin Offshore Wind Energy Project	2023/09532		Referral Decision
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Referral Decision
Not controlled action			
2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 & 19 and VIC/RL	2003/1282	Not Controlled Action	Completed
2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41	2004/1876	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Basker-Manta-Gummy Oil Development	2011/6052	Not Controlled Action	Completed
Basker-Manta Oil Field Development	2005/2026	Not Controlled Action	Completed
Beardie-1 Field wildcat oil well	2001/505	Not Controlled Action	Completed
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed
East Pilchard exploration well	2001/137	Not Controlled Action	Completed
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed
Hemingway1/Oil Exploration	2001/177	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed
Offshore Seismic Survey	2001/498	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			
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey Permit Area VIC/P49	2006/2943	Not Controlled Action (Particular Manner)	Post-Approval
Apache 3D seismic exploration survey	2006/3146	Not Controlled Action (Particular Manner)	Post-Approval
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
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
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
Non-exclusive 3-D Marine Seismic Survey, Bass Strait	2002/775	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval
Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic	2017/8097	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Exploration in Permit VIC/P41	2001/267	Not Controlled Action (Particular Manner)	Post-Approval
Seismic Survey	2001/206	Not Controlled Action (Particular Manner)	Post-Approval
Seismic survey, Gippsland Basin	2001/525	Not Controlled Action (Particular Manner)	Post-Approval
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
Tuskfish 3D Seismic Survey, Bass Strait	2002/864	Not Controlled Action (Particular Manner)	Post-Approval
West Seahorse Oil Development Project, Commonwealth waters offshore Victoria	2013/6973	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
Beardie-1 Field wildcat oil well	2001/469	Referral Decision	Completed
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

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
Shark 3D Seismic Survey	2007/3294	Referral Decision	Completed

Key Ecological Features

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Upwelling East of Eden	South-east

Biologically Important Areas

[[Resource Information](#)]

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Known to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Sharks		
Carcharodon carcharias		
White Shark [64470]	Breeding (nursery area)	Known to occur
Whales		
Balaenoptera musculus brevicauda		
Pygmy Blue Whale [81317]	Foraging	Likely to be present

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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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: 02-Oct-2024

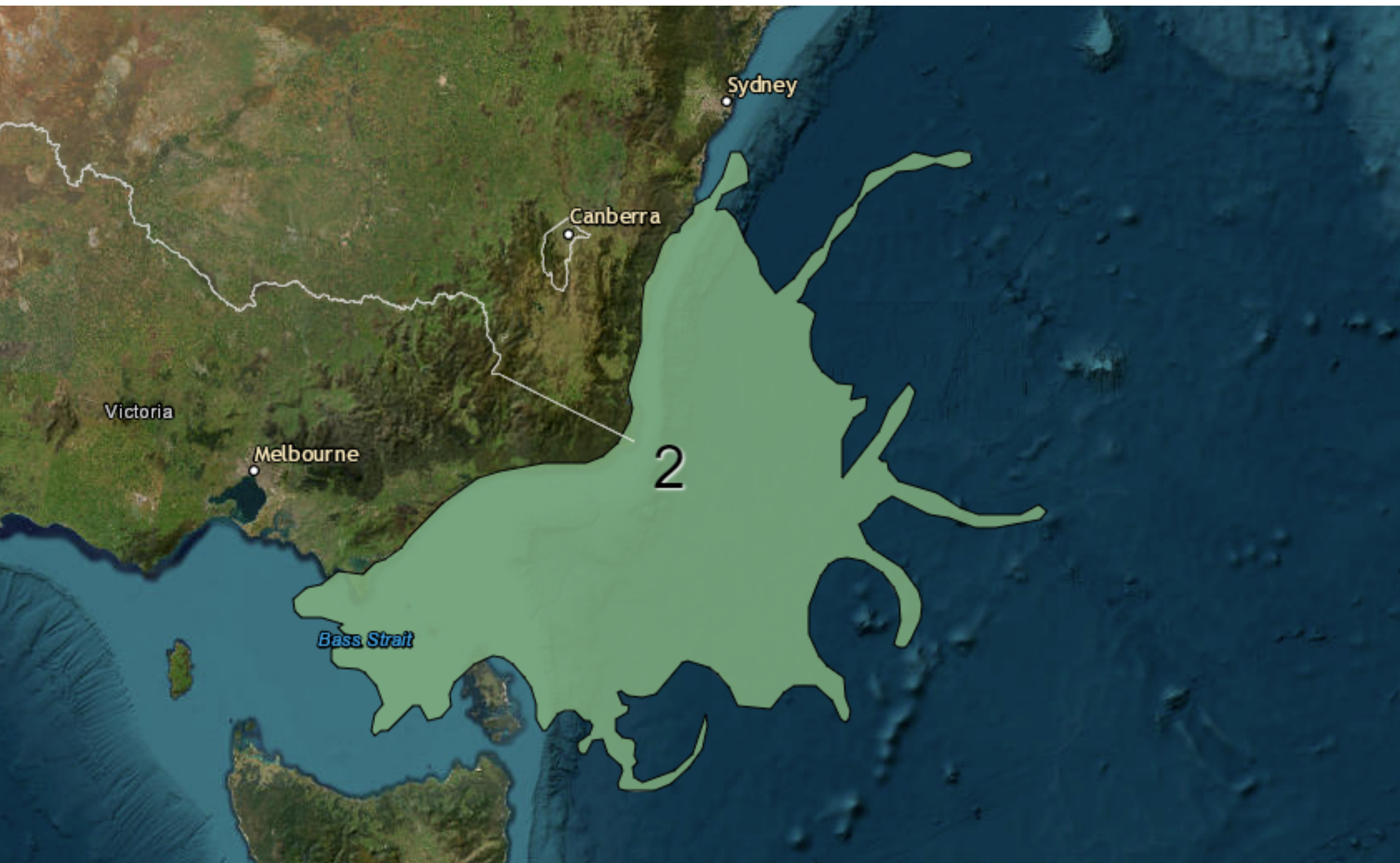
[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	4
Listed Threatened Ecological Communities:	20
Listed Threatened Species:	172
Listed Migratory Species:	88

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:	54
Commonwealth Heritage Places:	12
Listed Marine Species:	142
Whales and Other Cetaceans:	36
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	2
Australian Marine Parks:	6
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:	136
Regional Forest Agreements:	5
Nationally Important Wetlands:	44
EPBC Act Referrals:	141
Key Ecological Features (Marine):	4
Biologically Important Areas:	41
Bioregional Assessments:	2
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	
Corner inlet	Within Ramsar site	
Gippsland lakes	Within Ramsar site	

Commonwealth Marine Area	[Resource Information]
Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.	
Feature Name	
Commonwealth Marine Areas (EPBC Act)	
Commonwealth Marine Areas (EPBC Act)	
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 likely to occur within area
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Brogo Vine Forest of the South East Corner Bioregion	Endangered	Community likely to occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area

Community Name	Threatened Category	Presence Text
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana) Grassy Woodland and Associated Native Grassland	Critically Endangered	Community likely to occur within area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community likely to occur within area
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
Lowland Native Grasslands of Tasmania	Critically Endangered	Community likely to occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community likely to occur within area
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community may occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (Eucalyptus ovata / E. brookeriana)	Critically Endangered	Community likely to occur within area
Tasmanian white gum (Eucalyptus viminalis) wet forest	Critically Endangered	Community likely to occur within area
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	Endangered	Community may 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
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Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area
Aquila audax fleayi Tasmanian Wedge-tailed Eagle, Wedge-tailed Eagle (Tasmanian) [64435]	Endangered	Breeding likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Ceyx azureus diemenensis Tasmanian Azure Kingfisher [25977]	Endangered	Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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 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 may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Pterodroma 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

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
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
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche 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
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
CRUSTACEAN		
Engaeus martigener Furneaux Burrowing Crayfish [67220]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Euastacus bidawalus Bidawal Crayfish, Bidawal Crayfish, East Gippsland Spiny Crayfish [83136]	Endangered	Species or species habitat known to occur within area
Euastacus diversus Orbost Spiny Crayfish [66782]	Endangered	Species or species habitat may occur within area
FISH		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Galaxias terenasus Roundsnout Galaxias [87175]	Endangered	Species or species habitat may occur within area
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Endangered	Species or species habitat known 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
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Mordacia praecox Non-parasitic Lamprey, Precocious Lamprey [81530]	Endangered	Species or species habitat likely to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Rexea solandri (eastern Australian population) Eastern Gemfish [76339]	Conservation Dependent	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
FROG		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Litoria watsoni Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat known to occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area
Uperoleia martini Martin's Toadlet [1873]	Endangered	Species or species habitat known to occur within area
MAMMAL		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
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 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 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 caerulescens Limestone Blue Wattle, Buchan Blue, Buchan Blue Wattle [21883]	Vulnerable	Species or species habitat known to occur within area
Acacia constablei Narrabarba Wattle [10798]	Critically Endangered	Species or species habitat known to occur within area
Acacia georgensis Bega Wattle [9848]	Vulnerable	Species or species habitat known to occur within area
Acacia lanigera var. gracilipes [31652]	Endangered	Species or species habitat may occur within area
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area
Astrotricha crassifolia Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Astrotricha sp. Howe Range (D.E.Albrecht 1054)		
Long-leaf Star-hair [85676]	Critically Endangered	Species or species habitat known to occur within area
Astrotricha sp. Wingan Inlet (J.A.Jeanes 2268)		
Wingan Star-hair [85675]	Endangered	Species or species habitat known to occur within area
Banksia vincentia		
[88276]	Critically Endangered	Species or species habitat known to occur within area
Caladenia caudata		
Tailed Spider-orchid [17067]	Vulnerable	Species or species habitat may 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 known to occur within area
Commersonia prostrata		
Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area
Correa baeuerlenii		
Chef's Cap [17007]	Vulnerable	Species or species habitat known to occur within area
Correa lawrenceana var. genoensis		
Genoa River Correa [66626]	Endangered	Species or species habitat may occur within area
Corunastylis rhyolitica listed as Genoplesium rhyoliticum		
Pambula Midge-orchid, Rhyolite Midge Orchid [78697]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Corunastylis vernalis listed as Genoplesium vernale East Lynne Midge-orchid [78699]	Vulnerable	Species or species habitat known to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area
Deyeuxia ramosa Climbing Bent-grass [87970]	Critically Endangered	Species or species habitat known to occur within area
Dianella amoena Matted Flax-lily [64886]	Endangered	Species or species habitat known to occur within area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus stenostoma Jillaga Ash [3976]	Endangered	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	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
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Leionema ralstonii [64926]	Vulnerable	Species or species habitat known to occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat likely to occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	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
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area
Pomaderris cotoneaster Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area
Pomaderris parrisiae Parris' Pomaderris [22119]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum affine Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	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 spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Prostanthera galbraithiae Wellington Mintbush [64959]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat known to occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat likely to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area
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 may occur within area
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat likely to occur within area
Spyridium cinereum Tiny Spyridium [13564]	Endangered	Species or species habitat known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Endangered	Species or species habitat 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 known to occur within area
Zieria tuberculata Warty Zieria [56736]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	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

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat likely to occur within area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
SHARK		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Centrophorus harrissoni Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish [68444]	Conservation Dependent	Species or species habitat likely to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
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

Scientific Name	Threatened Category	Presence Text
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 likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharias taurus Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Breeding known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	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

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
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

Scientific Name	Threatened Category	Presence Text
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	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]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Australian National University	
Commonwealth Land - Australian National University [15737]	NSW
Commonwealth Land - Australian National University [12021]	NSW
Commonwealth Land - Australian National University [12022]	NSW
Commonwealth Land - Australian National University [12024]	NSW
Commonwealth Land - Australian National University [12023]	NSW
Commonwealth Land - Australian National University [12019]	NSW

Commonwealth Trading Bank of Australia

Commonwealth Land - Commonwealth Trading Bank of Australia [12017]	NSW
Commonwealth Land - Commonwealth Trading Bank of Australia [12020]	NSW

Communications, Information Technology and the Arts - Australian Postal Corporation

Commonwealth Land - Australian Postal Commission [12052]	NSW
Commonwealth Land - Australian Postal Commission [12016]	NSW

Communications, Information Technology and the Arts - Telstra Corporation Limited

Commonwealth Land - Australian Telecommunications Commission [12014]	NSW
Commonwealth Land - Australian Telecommunications Commission [12049]	NSW
Commonwealth Land - Australian Telecommunications Commission [12025]	NSW
Commonwealth Land - Australian Telecommunications Commission [16089]	NSW
Commonwealth Land - Australian Telecommunications Commission [15430]	NSW
Commonwealth Land - Australian Telecommunications Commission [12265]	NSW
Commonwealth Land - Australian Telecommunications Commission [15461]	NSW

Commonwealth Land Name	State
Commonwealth Land - Australian Telecommunications Commission [12038]	NSW
Commonwealth Land - Australian Telecommunications Commission [15611]	NSW
Commonwealth Land - Australian Telecommunications Commission [12050]	NSW
Commonwealth Land - Australian Telecommunications Commission [12053]	NSW
Commonwealth Land - Australian Telecommunications Commission [12015]	NSW
Commonwealth Land - Telstra Corporation Limited [15888]	NSW
Commonwealth Land - Telstra Corporation Limited [12051]	NSW
Defence	
Defence - BEECROFT RAPIER RANGE [10051]	NSW
Defence - BEECROFT RAPIER RANGE [10050]	NSW
Defence - BEECROFT RAPIER RANGE [10052]	NSW
Defence - BEECROFT RAPIER RANGE [10048]	NSW
Defence - BEECROFT RAPIER RANGE [10049]	NSW
Defence - DUTSON BOMBING RANGE [20033]	VIC
Defence - DUTSON BOMBING RANGE [20035]	VIC
Defence - DUTSON BOMBING RANGE [20038]	VIC
Defence - DUTSON BOMBING RANGE [20034]	VIC
Defence - DUTSON BOMBING RANGE [20061]	VIC
Defence - DUTSON BOMBING RANGE [20036]	VIC
Defence - DUTSON BOMBING RANGE [20037]	VIC
Defence - DUTSON BOMBING RANGE [20062]	VIC
Defence - SUSSEX INLET - DEFENCE RESERVE [11233]	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 [91005]	JBT

Commonwealth Land Name	State
Commonwealth Land - Booderee National Park [91001]	JBT
Commonwealth Land - Booderee National Park [91003]	JBT
Commonwealth Land - Booderee National Park [91004]	JBT
Commonwealth Land - Booderee National Park [91002]	JBT

Unknown	
Commonwealth Land - [21488]	VIC
Commonwealth Land - [12042]	NSW
Commonwealth Land - [21498]	VIC
Commonwealth Land - [21490]	VIC
Commonwealth Land - [21496]	VIC
Commonwealth Land - [21497]	VIC
Commonwealth Land - [12041]	NSW
Commonwealth Land - [21487]	VIC
Commonwealth Land - [21489]	VIC
Commonwealth Land - [21491]	VIC

Commonwealth Heritage Places	[Resource Information]	
Name	State	Status
Historic		
Cape St George Lighthouse Ruins & Curtilage	ACT	Listed place
Christians Minde Settlement	ACT	Listed place
Gabo Island Lighthouse	VIC	Listed place
Jervis Bay Botanic Gardens	ACT	Listed place
Montague Island Lighthouse	NSW	Listed place
Point Perpendicular Lightstation	NSW	Listed place
Royal Australian Naval College	ACT	Listed place
Wilsons Promontory Lighthouse	VIC	Listed place

Indigenous		
Crocodile Head Area	NSW	Within listed place
Currarong Rockshelters Area	NSW	Within listed place

Name	State	Status
Jervis Bay Territory	ACT	Listed place
Natural		
Beecroft Peninsula	NSW	Listed place
Listed Marine Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Breeding known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
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

Scientific Name	Threatened Category	Presence Text
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting 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
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

Scientific Name	Threatened Category	Presence Text
Limicola falcinellus Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Pelecanoides urinatrix Common Diving-Petrel [1018]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Breeding likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Cosmocampus howensis Lord Howe Pipefish [66208]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		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 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

Scientific Name	Threatened Category	Presence Text
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
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
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]		Breeding known to 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

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and Other Cetaceans [Resource Information]		
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
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

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 ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Commonwealth Reserves Terrestrial			[Resource Information]
Name	State	Type	
Booderee	JBT	Botanic Gardens (Commonwealth)	
Booderee	JBT	National Park (Commonwealth)	

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	

Park Name	Zone & IUCN Categories
Jervis	Habitat Protection Zone (IUCN IV)
Flinders	Marine National Park Zone (IUCN II)
Beagle	Multiple Use Zone (IUCN VI)
East Gippsland	Multiple Use Zone (IUCN VI)
Flinders	Multiple Use Zone (IUCN VI)
Jervis	Special Purpose Zone (Trawl) (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Anser Island	Reference Area	VIC
Baawang	Reference Area	VIC
Bancroft Bay - Kalimna G.L.R.	Natural Features Reserve	VIC
Barga	Reference Area	VIC
Bass Pyramid	Nature Reserve	TAS
Batemans	Marine Park	NSW
Baxter Island G.L.R.	Natural Features Reserve	VIC
Bell Bird Creek	Nature Reserve	NSW
Belowla Island	Nature Reserve	NSW
Bemm, Goolengook, Arte and Errinundra Rivers	Heritage River	VIC
Ben Boyd	National Park	NSW
Benedore River	Reference Area	VIC
Bermagueue	Nature Reserve	NSW
Bermagui	Flora Reserve	NSW
Beware Reef	Marine Sanctuary	VIC

Protected Area Name	Reserve Type	State
Biamanga	National Park	NSW
Blond Bay G.L.R.	Natural Features Reserve	VIC
Blond Bay W.R.	Natural Features Reserve	VIC
Blyth Point	Conservation Area	TAS
Bournda	National Park	NSW
Brodribb F.R.	Nature Conservation Reserve	VIC
Brodribb River F.F.R	Nature Conservation Reserve	VIC
Broulee Island	Nature Reserve	NSW
Brush Island	Nature Reserve	NSW
Bun Beetons Point	Conservation Area	TAS
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
Clyde River	National Park	NSW
Cone Islet	Conservation Area	TAS
Conjola	National Park	NSW
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
Cullendulla Creek	Nature Reserve	NSW
Curtis Island	Nature Reserve	TAS

Protected Area Name	Reserve Type	State
Darriman H29 B.R	Natural Features Reserve	VIC
Devils Tower	Nature Reserve	TAS
Double Creek	Natural Catchment Area	VIC
East Gippsland Coastal streams	Natural Catchment Area	VIC
East Moncoeur Island	Conservation Area	TAS
Egg Beach	Conservation Area	TAS
Entrance Point	Reference Area	VIC
Eurobodalla	National Park	NSW
Ewing Morass W.R	Natural Features Reserve	VIC
First and Second Islands F.R.	Nature Conservation Reserve	VIC
Flannagan Island G.L.R.	Natural Features Reserve	VIC
Foochow	Conservation Area	TAS
Fraser Island G.L.R.	Natural Features Reserve	VIC
Fresh-water Swamp, Woodside Beach W.R	Natural Features Reserve	VIC
Giffard H31 B.R	Natural Features Reserve	VIC
Gippsland Lakes Coastal Park	Conservation Park	VIC
Gulaga	National Park	NSW
Hogan Group	Conservation Area	TAS
Illawong	Nature Reserve	NSW
Jack Smith Lake W.R	Natural Features Reserve	VIC
Jacksons Cove	Conservation Area	TAS
Jervis Bay	National Park	NSW
Jervis Bay	Marine Park	NSW

Protected Area Name	Reserve Type	State
Kent Group	National Park	TAS
Killiecrankie	Nature Recreation Area	TAS
Lake Coleman 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 Tyers S.P.	State Park	VIC
Little Island	Conservation Area	TAS
Low Point	Conservation Area	TAS
Mallacoota B.R.	Natural Features Reserve	VIC
Maxwells	Flora Reserve	NSW
Meroo	National Park	NSW
Metung B.R.	Natural Features Reserve	VIC
Mimosa Rocks	National Park	NSW
Montague Island	Nature Reserve	NSW
Morley Swamp G.L.R.	Natural Features Reserve	VIC
Mortimers Paddock B.R.	Natural Features Reserve	VIC
Morton	National Park	NSW
Mount Tanner	Nature Recreation Area	TAS
Mount Vereker Creek	Natural Catchment Area	VIC
Mumbulla	Flora Reserve	NSW
Murrah	Flora Reserve	NSW
Murramarang	National Park	NSW

Protected Area Name	Reserve Type	State
Nadgee	Nature Reserve	NSW
Narrawallee Creek	Nature Reserve	NSW
Ninety Mile Beach	Marine National Park	VIC
Nooramunga Marine & Coastal Park	National Parks Act Schedule 4 park or reserve	VIC
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
Palana Beach	Nature Recreation Area	TAS
Pasco Group	Conservation Area	TAS
Point Hicks	Marine National Park	VIC
Rame Head	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Raymond Island G.L.R.	Natural Features Reserve	VIC
Rigby Island G.L.R.	Natural Features Reserve	VIC
Rodondo Island	Nature Reserve	TAS
Roydon Island	Conservation Area	TAS
Salt Lake - Backwater Morass G.L.R.	Natural Features Reserve	VIC
Sandpatch	Wilderness Zone	VIC
Seal Creek	Reference Area	VIC
Seal Islands W.R.	Nature Conservation Reserve	VIC
Sentinel Island	Conservation Area	TAS
Shallow Inlet Marine and Coastal Park	National Parks Act Schedule 4 park or reserve	VIC

Protected Area Name	Reserve Type	State
Sister Islands	Conservation Area	TAS
Snowy River	Heritage River	VIC
Southern Wilsons Promontory	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Steel Bay - Newland Backwater G.L.R.	Natural Features Reserve	VIC
Sugarloaf Rock	Conservation Area	TAS
Tanja	Flora Reserve	NSW
Tarra Tarra B.R	Natural Features Reserve	VIC
The Dock	Conservation Covenant	TAS
The Lakes	National Park	VIC
Tollgate Islands	Nature Reserve	NSW
Unnamed P0155	Private Nature Reserve	VIC
Vereker Creek	Reference Area	VIC
Wallagaraugh River SS.R.	Natural Features Reserve	VIC
Warrigal Creek SS.R.	Natural Features Reserve	VIC
Watergums Creek	Flora Reserve	NSW
West Moncoeur Island	Nature Reserve	TAS
William Hunter F.R	Nature Conservation Reserve	VIC
Wilsons Promontory	National Park	VIC
Wilsons Promontory	Wilderness Zone	VIC
Wilsons Promontory	Marine National Park	VIC
Wilsons Promontory Islands	Remote and Natural Area - Schedule 6, National Parks Act	VIC
Wilsons Promontory Marine Park	National Parks Act Schedule 4 park or reserve	VIC

Protected Area Name	Reserve Type	State
Wilsons Promontory Marine Reserve	National Parks Act Schedule 4 park or reserve	VIC
Wingaroo	Nature Reserve	TAS
Woodside H26 B.R.	Natural Features Reserve	VIC
Woodside H27 B.R	Natural Features Reserve	VIC
Woodside H28 B.R	Natural Features Reserve	VIC
Wright Rock	Nature Reserve	TAS
Yanakie F.R	Nature Conservation Reserve	VIC

Regional Forest Agreements
[Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
East Gippsland RFA	Victoria
Eden RFA	New South Wales
Gippsland RFA	Victoria
Southern RFA	New South Wales
Tasmania RFA	Tasmania

Nationally Important Wetlands
[Resource Information]

Wetland Name	State
Beecroft Peninsula	NSW
Bemm, Goolengook, Arte and Errinundra Rivers	VIC
Benedore River	VIC
Bondi Lake	NSW
Clyde River Estuary	NSW
Coila Creek Delta	NSW
Cormorant Beach	NSW

Wetland Name	State
Corner Inlet	VIC
Cullendulla Creek and Embayment	NSW
Durras Lake	NSW
Ewing's Marsh (Morass)	VIC
Jack Smith Lake State Game Reserve	VIC
Jervis Bay	NSW
Jervis Bay Sea Cliffs	NSW
Lagoon Head	NSW
Lake Bunga	VIC
Lake King Wetlands	VIC
Lake Tyers	VIC
Lake Victoria Wetlands	VIC
Lake Wellington Wetlands	VIC
Lower Snowy River Wetlands System	VIC
Mallacoota Inlet Wetlands	VIC
Merimbula Lake	NSW
Meroo Lake Wetland Complex	NSW
Moruya River Estuary Saltmarshes	NSW
Nadgee Lake and tributary wetlands	NSW
Nargal Lake	NSW
Nelson Lagoon	NSW
Pambula Estuarine Wetlands	NSW
Shallow Inlet Marine & Coastal Park	VIC
Snowy River	VIC
St Georges Basin	NSW
Swan Lagoon	NSW
Sydenham Inlet Wetlands	VIC

Wetland Name	State
Tabourie Lake	NSW
Tamboon Inlet Wetlands	VIC
Tambo River (Lower Reaches) East Swamps	VIC
Termeil Lake Wetland Complex	NSW
Thurra River	VIC
Tuross River Estuary	NSW
Waldrons Swamp	NSW
Wallaga Lake	NSW
Wallagoot Lagoon (Wallagoot Lake)	NSW
Wollumboola Lake	NSW

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Aurora Green Offshore Wind Farm Preliminary Surveys	2024/09968		Referral Decision
Bermagui Golf Club Proposed Subdivision (Stages 3-8)	2022/09242		Post-Approval
Blue Mackerel North Offshore Wind Farm Marine Surveys	2024/09934		Referral Decision
Blue Marlin Offshore Wind Energy Project	2023/09532		Referral Decision
Broulee Beach Estate residential development subdivision	2023/09551		Completed
Eurobodalla Regional Hospital	2023/09506		Completed
Gippsland Offshore Wind Farm Marine Survey Investigations	2023/09682		Completed
Greater Gippsland Offshore Wind Project	2022/09379		Assessment
Greater Gippsland Offshore Wind Project Initial Marine Field Investigations	2022/09374		Completed
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia East	2024/09795		Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Preliminary Site Investigations for Great Eastern Offshore Wind Project	2024/09890		Referral Decision
Proposed residential subdivision	2023/09632		Completed
Seadragon Offshore Wind, Early Marine Surveys	2023/09670		Completed
Seadragon Offshore Wind Farm	2022/9163		Completed
South East Australia Carbon Capture and Storage Project, Commonwealth waters	2023/09732		Referral Decision
South East Australia Carbon Capture and Storage Project, Onshore and State waters	2023/09731		Referral Decision
South Pacific Offshore Wind Project	2023/09605		Completed
Controlled action			
Gippsland Lakes Mosquito Control Aerial /Hovercraft Spraying	2001/491	Controlled Action	Completed
Gippsland Regional Port Project	2020/8667	Controlled Action	Assessment Approach
Golden Beach Gas Project	2019/8513	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
Star of the South Offshore Wind Farm Project	2020/8650	Controlled Action	Guidelines Issued
Thomson River Mercury Recovery Project	2010/5734	Controlled Action	Completed
Yolla Gas Field (TRL1) Development	2001/321	Controlled Action	Post-Approval
Not controlled action			
2004/2005 drilling program for exploration and production (VIC 01-06, 09-11, 16, 18 & 19 and VIC/RL	2003/1282	Not Controlled Action	Completed
2D seismic Survey in VIC/P55, VIC/RL2 and VIC/P41	2004/1876	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
55m lattice tower & infrastructure	2003/1159	Not Controlled Action	Completed
Acquistion of 2D seismic data in State Waters adjacent to Ninety Mile Beach-VIC/P39(V)	2004/1889	Not Controlled Action	Completed
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
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
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
Batemans Bay Marina Redevelopment	2008/4265	Not Controlled Action	Completed
Beardie-1 Field wildcat oil well	2001/505	Not Controlled Action	Completed
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed
Caswell Street - Moruya East	2020/8781	Not Controlled Action	Completed
Clearance of native vegetation to create fire breaks	2004/1534	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

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Development of Kipper gas field within Vic/L3, Vic/L4 Vic/RL2	2005/2484	Not Controlled Action	Completed
Development of Turrum Oil Field and associated infrastructure	2003/1204	Not Controlled Action	Completed
DOFA weed eradication program at Goorooyaroo NSW	2003/1270	Not Controlled Action	Completed
Dredging of Tuross Lake channel and depositon of spoil in lake	2004/1554	Not Controlled Action	Completed
Drilling and side track completion at Baleen gas production well in Production Licence area VIC/L21	2004/1535	Not Controlled Action	Completed
Drilling of 'Culverin' oil exploration well, permit VIC/P56	2005/2279	Not Controlled Action	Completed
Drilling of Scallop-1 Exploration Well	2003/917	Not Controlled Action	Completed
East Pilchard exploration well	2001/137	Not Controlled Action	Completed
Eden Wind Farm	2011/6037	Not Controlled Action	Completed
George Bass Drive Lilli Pilli Road Realignment	2021/8876	Not Controlled Action	Completed
Gippsland Basin Seismic Programme	2004/1866	Not Controlled Action	Completed
Gippsland Lakes Composting Toilet Program	2000/66	Not Controlled Action	Completed
Golf Course Extension	2001/215	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
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Kipper Tuna Turrum Project Maintenance Dredging	2010/5430	Not Controlled Action	Completed
Longtom-3 Gas Appraisal Well, VIC/P54	2005/2494	Not Controlled Action	Completed
Longtom Gas Pipeline Development, VIC/P54	2006/3072	Not Controlled Action	Completed
Marlin-Snapper Gas Pipeline Project	2006/3197	Not Controlled Action	Completed
Melville 1 Oil Exploration Well	2001/167	Not Controlled Action	Completed
Milton/Ulladulla Sewerage Scheme	2001/251	Not Controlled Action	Completed
Northright-1 Exploration Well	2001/209	Not Controlled Action	Completed
Offshore Petroleum Exploration	2001/289	Not Controlled Action	Completed
Offshore Seismic Survey	2001/498	Not Controlled Action	Completed
Princes Highway Upgrade, NSW	2013/6968	Not Controlled Action	Completed
Pump station upgrades and rising main construction, Lakes Entrance, Victoria	2016/7646	Not Controlled Action	Completed
Ship to ship crude oil lightering	2008/4279	Not Controlled Action	Completed
Ship to Ship Crude Oil Lightering	2001/271	Not Controlled Action	Completed
Sole-2 appraisal gas well, VIC/RL3	2002/636	Not Controlled Action	Completed
Sole gas field development	2003/937	Not Controlled Action	Completed
Turrum Phase 2 Development Project	2008/4191	Not Controlled Action	Completed
wastewater collection systems and pumping stations	2001/511	Not Controlled Action	Completed
West Triton Drilling Program - Gippsland Basin	2007/3915	Not Controlled Action	Completed
Wood Processing and Metallurgical Carbon Facility	2001/478	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Wreck Bay Housing Development	2001/299	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 marine seismic survey in PEP-11 permit area, NSW	2002/879	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Aquisition Survey	2008/4041	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2008/4131	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey	2008/4066	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 (Particular Manner)	Post-Approval
Bass Basin 2D and 3D seismic surveys (T/38P & T/37P)	2007/3650	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Bream 3D seismic survey	2006/2556	Not Controlled Action (Particular Manner)	Post-Approval
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 of wharf	2003/1050	Not Controlled Action (Particular Manner)	Post-Approval
Dalrymple 3D Seismic Survey	2010/5680	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
Eden Breakwater Wharf extension, NSW	2015/7582	Not Controlled Action (Particular Manner)	Post-Approval
Eden Breakwater Wharf Extension, NSW	2016/7828	Not Controlled Action (Particular Manner)	Completed
Gas Pipeline	2000/20	Not Controlled Action (Particular Manner)	Post-Approval
Gippsland 2D Marine Seismic Survey - VIC/P-63, VIC/P-64 and T/46P	2009/5241	Not Controlled Action (Particular Manner)	Post-Approval
Golden Beach gas field development	2003/1031	Not Controlled Action (Particular Manner)	Post-Approval
Hawaiki Fibre-Optic Submarine Cable installation	2016/7765	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)		Manner)	
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
International fibre optic submarine cable installation, between Sydney and Honiara, Solomon Islands	2015/7502	Not Controlled Action (Particular Manner)	Post-Approval
Lakes Entrance Sand Management Program Trial Dredging	2007/3852	Not Controlled Action (Particular Manner)	Post-Approval
Lakes Entrance Sand Management Program Trial Dredging	2007/3694	Not Controlled Action (Particular Manner)	Completed
Longtom-5 Offshore Production Drilling (Vic/L29), VIC	2012/6498	Not Controlled Action (Particular Manner)	Post-Approval
Longtom South -1 Exploration Drilling	2011/6217	Not Controlled Action (Particular Manner)	Post-Approval
Maintenance Dredging of Oceanic Sand	2011/5932	Not Controlled Action (Particular Manner)	Post-Approval
Non-exclusive 3-D Marine Seismic Survey, Bass Strait	2002/775	Not Controlled Action (Particular Manner)	Post-Approval
Northern Fields 3D Seismic Survey	2001/140	Not Controlled Action (Particular Manner)	Post-Approval
Pelican 3D Marine Seismic Survey, Gippsland Basin, Vic	2017/8097	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
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
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
Tap Oil Ltd Molson 2D Seismic Survey T47P	2008/3967	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
Tuskfish 3D Seismic Survey, Bass Strait	2002/864	Not Controlled Action (Particular Manner)	Post-Approval
Waterfront Facility at HMAS Creswell	2002/658	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
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
Beecroft Weapons Range Visitors Centre	2004/1322	Referral Decision	Completed
Breeding program for Grey Nurse Sharks	2007/3245	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
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
Big Horseshoe Canyon	South-east
Canyons on the eastern continental slope	Temperate east

Name	Region
Shelf rocky reefs	Temperate east
Upwelling East of Eden	South-east

Biologically Important Areas		[Resource Information]
Scientific Name	Behaviour	Presence
Dolphins		
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Tursiops aduncus		
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur

Seabirds		
Ardenna carneipes		
Flesh-footed Shearwater [82404]	Foraging	Known to occur
Ardenna grisea		
Sooty Shearwater [82651]	Breeding	Known to occur
Ardenna grisea		
Sooty Shearwater [82651]	Foraging	Likely to occur
Ardenna pacifica		
Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Ardenna tenuirostris		
Short-tailed Shearwater [82652]	Breeding	Known to occur
Ardenna tenuirostris		
Short-tailed Shearwater [82652]	Foraging	Likely to occur
Ardenna tenuirostris		
Short-tailed Shearwater [82652]	Foraging	Known to occur
Ardenna tenuirostris		
Short-tailed Shearwater [82652]	Foraging	Likely to occur
Diomedea exulans (sensu lato)		
Wandering Albatross [1073]	Foraging	Likely to occur
Diomedea exulans (sensu lato)		
Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis		
Antipodean Albatross [82269]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Eudyptula minor Little Penguin [1085]	Breeding	Likely to occur
Eudyptula minor Little Penguin [1085]	Breeding	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging	Known to occur
Macronectes giganteus Southern Giant Petrel [1060]	Foraging	Known to occur
Macronectes halli Northern Giant Petrel [1061]	Foraging	Known to occur
Oceanites oceanites Wilson's Storm Petrel [1034]	Migration	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Breeding	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Phalacrocorax fuscescens Black-faced Cormorant [59660]	Foraging	Known to occur
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur
Pterodroma macroptera Great-winged Petrel [1035]	Foraging	Likely to occur
Thalassarche bulleri Buller's Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur

Scientific Name	Behaviour	Presence
Thalassarche cauta steady White-capped Albatross [82344]	Foraging	Known to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Likely to occur
Thalasseus bergii Crested Tern [83000]	Breeding	Known to occur
Thalasseus bergii Crested Tern [83000]	Foraging	Likely to occur
Sharks		
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur
Carcharias taurus Grey Nurse Shark [64469]	Reproduction	Known to occur
Carcharodon carcharias White Shark [64470]	Breeding (nursery area)	Known to occur
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur
Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website

SubRegion	BioRegion	Website
Gippsland	Gippsland Basin	BA website
Sydney	Sydney Basin	BA website

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data 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 report (Summary)

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Appendix E-1 Relevant persons consultation levels

Relevant persons consultation levels for Regulation 25(1)(a) relevant persons

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
420	Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet)	EMBA	Function as department or agency of Tasmania that aims to protect and promote Tasmania's unique Aboriginal heritage and facilitate the return of land to Tasmania's Aboriginal people. Aboriginal Heritage Tasmania administers the Aboriginal Heritage Act 1975, which establishes the Aboriginal Heritage Council of Tasmania, the Aboriginal Lands Act 1995, which establishes the Aboriginal Land Council of Tasmania, and the Native Title (Tasmania) Act 1994.	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.
4	Australian Fisheries Management Authority	OA	Function as a Commonwealth government agency responsible for management of Commonwealth commercial fisheries from 3-200nm. The OAs overlap with local fisheries.	L1	Esso has applied its methodology and assessed department or agency as a Level 1 consultation as their function is in the OA of the planned activity.
125	Australian Hydrographic Office	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 department or agency as a Level 1 consultation as they provide Notice to Mariners and therefore have a function in the OA of the planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
2	Australian Maritime Safety Authority	OA	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 department or agency as a Level 1 consultation as their function is in the OA of the planned activity.
407	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.	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.
100	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 department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.
339	Department of Climate Change, Energy, the Environment and Water	OA	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 department or agency as a Level 1 consultation as their function is in the OA of the planned activity.
104	Department of Defence	OA	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 department or agency as a Level 1 consultation as their function is in the OA of the planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
383	Department of Jobs, Skills, Industry and Regions	ATBA	Function as department or agency of Victoria for economic recovery and business and industry engagement.	L2	Esso has applied its methodology and assessed department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.
382	Department of Transport and Planning	EMBA	Function as Victorian State government department with primary responsibility for maritime sourced pollution oil spills in Victorian waters. Function as the oil spill response control agency for Victorian state waters.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their interest may be relevant in the event of an unplanned activity.
103	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 department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.
10	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.
11	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
392	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.
13	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.
63	Environmental Protection Agency (Tasmania)	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.
536	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.
15	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
409	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 person or organisation as a Level 3 consultation as their function is in the EMBA and no impact from planned activity.
495	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.
539	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 department or agency as a Level 3 consultation as their function is to provide response in the event of an unplanned activity.
93	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.
85	National Offshore Petroleum Titles Administrator	OA	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 department or agency as a Level 1 consultation as their function is in the OA of the planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
129	Parks Australia (part of DCCEEW)	ATBA	Function as Commonwealth government agency responsible for managing Commonwealth parks, reserves and conservation zones.	L2	Esso has applied its methodology and assessed department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.
27	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 department or agency as a Level 3 consultation as their function is to provide response in the event of an unplanned activity.
399	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.
42	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 department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
38	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.
39	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 department or agency as a Level 3 consultation as their function is to provide response in the event of an unplanned activity.
64	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.	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.
62	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
101	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 department or agency as a Level 2 consultation as their function is in the ATBA of the planned activity.
20	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.
380	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

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
529	Department of Energy, Environment and Climate Action (DEECA) - cetacean/marine wildlife	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 department or agency 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

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
122	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.
421	Aboriginal Land Council of Tasmania	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
516	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.
347	Australian Institute of Marine and Power Engineers	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.
517	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.
121	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.
405	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 interest may be relevant in the event of an unplanned activity.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
207	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.
372	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.
337	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.
87	Bass Oil	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.
26	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.

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630	Blue Mackerel North Project	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.
107	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.
209	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.
424	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.
511	Catches Trust (Chairman)	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
425	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.
218	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.
76	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.
335	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.
496	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.

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34	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.
83	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.
8	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.
82	East Gippsland Estuarine Fishermens 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.
79	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.

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136	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.
426	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.
336	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.
58	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.
518	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

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					may be relevant in the event of an unplanned activity.
204	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.
427	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.
128	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.
428	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.

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353	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.
197	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.
393	Gippsland and East Gippsland Aboriginal Cooperative Ltd	EMBA	Community not-for-profit organization.	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.
578	Gippsland Dawn Project	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.
208	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.

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408	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.
651	Gippsland Skies Project	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.
581	Golden Paradise Beach Ratepayers & Residents Association Inc	EMBA	A not-for-profit Volunteer Organisation providing a range of services and advocacy for, and on behalf of, the communities of Golden Beach and Paradise Beach, in Gippsland, Victoria.	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.
650	Great Eastern Offshore Wind Farm Project	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.
362	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
429	Gulaga and Biamanga Joint Authority	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.
213	Gunaikurnai Land and Waters Aboriginal Corporation	OA	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.
190	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.
205	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.
652	High Sea Wind Project	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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631	Iberdrola Australia OW 2 Project	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.
138	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.
649	Kent Offshore Wind Project	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.
430	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.
395	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.

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17	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.
410	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.
18	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.
109	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.
198	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.	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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199	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.
348	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.
431	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.
137	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.
211	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.

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585	Navigator North Project	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.
374	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.
433	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.
434	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.
435	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
436	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.
601	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.
437	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.
604	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.
438	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
439	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.
440	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.
441	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.
442	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.
443	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.

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444	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.
602	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.
445	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.
446	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.
447	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.

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448	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.
449	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.
587	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.
450	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.
451	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.

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452	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.
453	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.
454	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.
455	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.
456	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
457	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.
588	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.
458	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.
459	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.
460	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
461	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.
462	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.
463	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.
464	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.
603	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
465	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.
466	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.
467	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.
468	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.
469	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
470	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.
471	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.
472	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.
473	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.
474	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
25	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.
586	Orsted Offshore Australia 1 - Gippsland 1 and 2 Projects	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.
123	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.
475	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.
398	Peels 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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
212	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.
30	Port Franklin Fishermans 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.
84	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.
515	Qube (operator - Barries 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.
192	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
389	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.
507	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.
508	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.
509	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.
510	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
534	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.
541	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.
559	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.
560	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.
561	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
562	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.
564	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.
565	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.
566	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.
567	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
568	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.
570	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.
571	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.
572	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.
573	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
574	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.
575	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.
590	Relevant Person #587	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.
594	Relevant Person #594	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.
595	Relevant Person #595	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
596	Relevant Person #596	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.
599	Relevant Person #599	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.
600	Relevant Person #600	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.
400	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.
214	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
196	Scallop Fishermens 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.
519	Scuba Divers Federation of Victoria (SDFV)	EMBA	Supporting and representing recreational scuba diving clubs.	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.
520	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.
33	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.
402	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
202	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.
24	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.
476	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.
37	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.
77	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
638	Star of the South Wind Farm Pty Ltd (FL005) and Kut-Wut Brataualung Pty Ltd (FL006)	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.
522	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.
40	Sustainable Shark Fishing Association	EMBA	Organisation as representing fishers in the Southern and Eastern Scalefish and Shark Fishery, Gillnet Hook and Trap fisheries.	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.
477	TAS Local Government Area / Council: Break ODay	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.
478	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
479	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.
480	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.
481	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.
482	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.
483	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
484	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.
485	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.
486	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.
487	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.
488	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
489	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.
490	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.
421	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.
491	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.
41	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
373	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.
345	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.
365	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.
120	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 their activity may occur in the EMBA and no impact from planned activity.
124	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
592	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.
124	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.
592	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.
124	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.
592	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
513	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.
70	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.
51	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.
403	Victorian Safety Emergency Services Eastern Region	EMBA	Function as a government control agency for flood, storm, tsunami, earthquake and landslide throughout Victoria.	L3	Esso has applied its methodology and assessed department or agency as a Level 3 consultation as their activity may occur in the EMBA and no impact from planned activity.
52	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
55	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.
370	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.
111	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

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
1	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.

ID	Person/organisation	Geo. area	Function, interest or activity	Consultation Level	Classification justification
394	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.
432	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.	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	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.
112	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-2 Consultation report (Summary)

Reg 25(2) sufficient information:

Unless otherwise noted in the tables below - 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 on 28 March 2024 providing an information bulletin including activity description, location, timing, potential impacts and EMBA map. Email included links to the Esso Consultation Hub on the public website, the Esso Consultation Questionnaire to better understand relevant person consultation wishes and NOPSEMA's "Consultation on offshore petroleum environment plans brochure". Esso held 10 community information sessions between February 2024 and September 2024 in various locations around Gippsland to discuss activity description, location and potential impacts. Additional emails were sent throughout May 2024 and October with updates on current activities including G&G - links to proposed activity information available via Consultation hub e.g. Information bulletins and webpages, including EMBA information and consultation submission dates.

Reg 25(3) sufficient time:

Unless otherwise noted in the tables 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, a 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. Since the start of consultation, as noted in the 'Date' column, which continued until resubmission of this EP in October 2024 sufficient time has been provided, giving the relevant person the opportunity to provide feedback over a period greater than 30 days.

Consultation report (Summary) for Regulation 25 (1)(a) relevant persons

Aboriginal Heritage Tasmania (Part of the Department Premier and Cabinet) [420]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Fisheries Management Authority [4]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Hydrographic Office [125]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	02/04/2024	Email	Automatic response received.		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Maritime Safety Authority [2]

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): EP controls
Person/Organisation requested to be consulted on this activity.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
From	30/05/2024	Email	AMSA would like to continue to participate in the consultation process for the Gippsland Basin Geophysical and Geotechnical Investigations - Environment Plan Revision.
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
From	11/06/2024	Email	Automatic response received.
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.
To	17/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
From	23/07/2024	Email	Update on base business consultation priorities.
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.
To	07/10/2024	Email	Update on the Gippsland Basin Geophysical and Geotechnical Investigations - Environment Plan Revision.

Bass Coast Shire Council [407]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
From	28/03/2024	Email	Automatic response received.	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
From	11/06/2024	Email	Automatic response received.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	09/07/2024	Email	Consultation on offshore activities including G&G EP.	

CarbonNet [100]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Department of Climate Change, Energy, the Environment and Water [339]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Stakeholder requested consultation material to be resent.		
From	28/03/2024	Email	Automatic response received.		
To	29/03/2024	Email	Information on consultation on offshore activities resent in amended format.		
From	29/03/2024	Email	Automatic response received.		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
From	25/04/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
To	01/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.		

Department of Defence [104]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.
From	19/08/2024	Email	Automatic response received.

Department of Jobs, Skills, Industry and Regions [383]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.	
From	02/07/2024	Email	RDV requested the inclusion of six contacts on email distribution list for consultation material.	
To	03/07/2024	Email	Thank you for the email. We will add the emails below to our distribution list for future communications on Esso projects.	
To	03/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	08/07/2024	Email	Outgoing email advising won't be attending meeting face to face but will be online.	
To	08/07/2024	Email	Acknowledgement from Esso that email had been received.	
From	08/07/2024	Meeting - Online	Esso met (online) with RDV Gippsland.	
From	08/07/2024	Email	Acknowledgement of change in meeting plan.	
To	10/07/2024	Email	Follow up email with meeting notes.	
From	10/07/2024	Email	Response to follow up email.	

Department of Transport and Planning [382]

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): EP controls
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Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	05/04/2024	Email	DTP Marine Pollution team would like the opportunity to review any OPEP and related documents (i.e. NEBA) that is being prepared for submission to NOPSEMA		
To	29/04/2024	Email	Providing Geophysical and Geotechnical Investigations campaign Quick Reference Information.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/07/2024	Email	Esso scheduling meeting with DTP.		
From	15/07/2024	Email	DTP responding with meeting dates.		
To	16/07/2024	Email	Esso scheduling meeting with DTP.		
From	17/07/2024	Email	DTP accepting meeting.		
To	24/07/2024	Email	Invitation to attend a desk top emergency management exercise.		
To	05/08/2024	Email	Esso forwarding invitation to attend a desk top emergency management exercise.		
From	05/08/2024	Email	DTP requesting additional attendee.		
To	09/08/2024	Email	Follow up email with meeting notes.		
From	09/08/2024	Meeting - In Person	Meeting held with Department of Transport and Planning (Vic).		
From	09/08/2024	Email	Response to follow up email.		
To	09/09/2024	Email	Esso scheduling meeting with DTP.		
From	24/09/2024	Media Advertisement	Registration to attend Welshpool Community Information and Drop-in at Welshpool on 25 September 2024.		
To	24/09/2024	Email	Response to stakeholder acknowledging registration to attend Welshpool Community Information Session and Drop-in on Wednesday 25 September 2024.		
To	26/09/2024	Email	Thank-you email to stakeholder (sent on 26/9/24) for their attendance at the Community Information and Drop-in Session, Welshpool, Wednesday 25 September 2024.		

Director of National Parks [103]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

East Gippsland Catchment Management Authority [10]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

East Gippsland Shire Council [11]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
From	28/03/2024	Email	Automatic response received.	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	
From	11/06/2024	Email	Automatic response received.	
From	11/06/2024	Email	Automatic response received.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	

East Gippsland Water [392]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Environment Protection Authority Victoria [13]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Esso scheduling meeting		
From	11/06/2024	Email	Request to be consulted on all Esso activities in Gippsland.		
From	12/06/2024	Email	Automatic response received.		
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	04/07/2024	Email	Request to be consulted on all Esso activities in Gippsland.		
To	04/07/2024	Email	Stakeholder advised they have been added to mailing list.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/07/2024	Email	Consultation on offshore activities including G&G EP.		

Environmental Protection Agency (Tas) (used to be DPIPWE) [63]

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): EP controls
Response agency provided with Quick Reference Information, OPEP and TRPs.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	29/04/2024	Email	Geophysical and Geotechnical Investigations campaign providing quick reference information.
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.
To	19/06/2024	Email	Review of OPEP.
From	19/06/2024	Email	Review of OPEP.
From	24/06/2024	Email	Review of OPEP and detailed TRPs.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
To	11/07/2024	Email	Esso scheduling meeting.
To	15/07/2024	Email	Response to meeting request.
From	15/07/2024	Email	Esso scheduling meeting.

Fire Rescue Victoria [536]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
From	28/03/2024	Email	Automatic response received.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Gippsland Ports [15]

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): EP controls
Stakeholder advising they will send consultation information on to management.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	

From	11/06/2024	Email	Stakeholder will pass the email on to GP management.
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.
To	13/06/2024	Email	Esso thanking the Stakeholder to forwarding to GP management.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Gippsland Water [409]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Indigenous Land and Sea Corporation [495]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Maritime Border Command [539]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Mornington Peninsula Shire [93]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	

National Offshore Petroleum Titles Administrator [85]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
From	28/03/2024	Email	Automatic response received.	
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.	

Parks Australia (part of DCCEEW) [129]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Parks Victoria [27]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Ports Victoria [399]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

To	12/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Safe Transport Victoria - Maritime (used to be Transport Safety Victoria – Maritime Safety) [42]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

South Gippsland Shire Council [38]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
From	28/03/2024	Email	Automatic response received.		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

From	07/08/2024	Media Advertisement	Registering to attend a drop-in session at Foster.
To	07/08/2024	Email	Thank-you acknowledgement for registration for drop-in.
To	23/09/2024	Email	Email to stakeholder asking them if they are aware of recently advertised community information and drop-in sessions in South Gippsland and to register if they would like to attend one.
From	23/09/2024	Email	Automatic response received.
To	23/09/2024	Email	Providing detail to stakeholder (SGSC) about community information and drop-in sessions being held in South Gippsland in September 2024 following a bounce back from usual contact.
From	23/09/2024	Email	Automatic response received.
From	24/09/2024	Email	Stakeholder registering for drop-in session.
To	24/09/2024	Email	Response to stakeholder thanking them for their email and registration.
To	26/09/2024	Email	Thank-you email to stakeholder for attending the Community Information and drop-in Session.

State Emergency Service [39]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Tasmania Parks and Wildlife Service [64]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

To	12/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Transport for NSW [62]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	29/04/2024	Email	Geophysical and Geotechnical Investigations campaign providing quick reference information.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	12/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Esso scheduling meeting.		
To	15/07/2024	Email	Esso scheduling meeting.		
To	17/07/2024	Meeting - Online	Online meeting with Transport for NSW.		
From	17/07/2024	Email	Thanks for the meeting this morning. Link provided to the updated "Coastal Waters Marine Pollution Plan" which has replaced the "NSW State Waters Marine Oil and Chemical Spill Contingency Plan".		
To	17/07/2024	Email	Esso confirming contact details.		
From	17/07/2024	Email	Many thanks, advised changed email address.		
To	17/07/2024	Email	Thanks for letting me know about change of email address.		
To	11/09/2024	Email	Esso scheduling meeting.		

Victorian Fisheries Authority [101]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Wellington Shire Council [20]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	30/07/2024	Email	Registered attendance at Golden Beach presentation.		
To	29/08/2024	Drop-in Session - In Person	Consultation on offshore activities including G&G EP.		

West Gippsland Catchment Management Authority [380]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

*Consultation report (Summary) for Regulation 25 (1)(b) relevant persons**Department of Energy, Environment and Climate Action (DEECA) - cetacean/marine wildlife [529]*

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

*Consultation report (Summary) for Regulation 25 (1)(d) relevant persons**3D Oil [122]*

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Aboriginal Land Council of Tasmania (now directs to TAC SH_ID 368) [421]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (

			Appendix F-1).
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

Australian Conservation Foundation [516]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Institute of Marine and Power Engineers [347]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Marine Conservation Society (ACMS) [517]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
From	11/06/2024	Email	Automatic response received.
From	12/06/2024	Questionnaire	Stakeholder responded to questionnaire.
To	13/06/2024	Email	Esso acknowledging questionnaire responses.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Australian Southern Bluefin Tuna Industry Association [121]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Volunteer Coastguard [405]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian WildCatch Fishing [207]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Wildlife Conservancy [372]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Australian Workers Union [337]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	05/09/2024	Email	Esso scheduling meeting.		
From	06/09/2024	Email	Meeting request accepted.		
To	17/09/2024	Meeting – online	Meeting with AWU.		
To	23/10/2024	Email	Follow up email with meeting notes.		
To	24/10/2024	Email	Follow up email due to wrong email address.		

Bass Oil [87]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Beach Energy [26]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Blue Mackerel North Project [630]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/07/2024	Meeting - Online	Initial introduction meeting between Blue Mackerel North project team - Parkwind and JeraNex and Esso.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		

To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
From	16/09/2024	Email	Stakeholder introduction and request for meeting.

Boating Industry Association of Victoria [107]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Bunurong Land Council Aboriginal Corporation [209]

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): EP controls
Person/Organisation requested to be consulted on this activity.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	08/04/2024	Email	Second follow up email to request meeting to discuss Esso activities.		
From	08/04/2024	Email	Bunurong LC response to meeting request with suggested dates and times.		
To	11/04/2024	Email	EAPL response to Bunurong LC with suggested meeting date and time.		
To	12/04/2024	Email	EAPL confirmation to filling out booking form.		
From	12/04/2024	Email	Bunurong LC confirmation of placeholder for meeting and request for EAPL to fill out booking form.		
To	18/04/2024	Email	EAPL request to reschedule meeting.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	01/07/2024	Email	Consultation on offshore activities including G&G EP.		

To	02/07/2024	Email	Esso telling the Stakeholder what the full list of current consultation activities are and is happy to discuss them with the Stakeholder their next meeting.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

Cape Barren Island Aboriginal Association Incorporated (TAS) [424]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Catches Trust (Chairman) [511]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP.		

Circular Head Aboriginal Corporation (TAS) [425]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

Committee for Gippsland [218]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Commonwealth Fisheries Association [76]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Community Over Mining [335]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Construction, Forestry, Maritime, Mining and Energy Union [496]

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): EP controls
Meeting held to discuss offshore activities including G&G EP.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	16/08/2024	Email	Esso scheduling meeting.	
To	05/09/2024	Email	Esso scheduling meeting.	
To	17/09/2024	Meeting - Online	Meeting with CFMEU.	

Cooper Energy [34]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Corner Inlet Fisheries Habitat Association [83]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Country Fire Authority (Region 10) [8]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

East Gippsland Estuarine Fishermens Association [82]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Eastern Victorian Sea Urchin Divers Association [79]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Eastern Zone Abalone Industry Association [136]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Elders Council of Tasmania Aboriginal Corporation [426]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Electrical Trades Union [336]

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): EP controls
Meeting held to discuss offshore activities including G&G EP.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
From	23/05/2024	Questionnaire	Stakeholder responded to questionnaire.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	19/06/2024	Email	Esso acknowledging questionnaire responses.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	05/09/2024	Email	Esso scheduling meeting.		
From	06/09/2024	Email	Meeting request accepted.		
To	17/09/2024	Meeting – online	Meeting with ETU.		
To	23/10/2024	Email	Follow up email with meeting notes.		

Emperor Energy [58]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Environment Victoria [518]

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): EP controls
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Person/Organisation requested to be consulted on this activity.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
From	08/07/2024	Email	Stakeholder saying they should be considered a relevant person for these proposals and would like to be further consulted.		
To	09/07/2024	Email	Esso thanking for the email and telling the Stakeholder that they have been added to the distribution list and will receive direct communications.		

Far Out Charters [204]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

First Tasmanians Aboriginal Corporation (TAS) [427]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Fishing Tribunal [128]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

Flinders Island Aboriginal Association Inc (TAS) [428]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Game Fishing Association of Victoria [197]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	12/06/2024	Email	Requesting a meeting to provide an update on all offshore activities.		

From	15/06/2024	Email	Update on all offshore activities and SPJ decommissioning forum.
From	20/06/2024	Phone call	SPJ decommissioning forum and offshore activities.
To	02/07/2024	Meeting - In Person	Meeting to discuss all current and proposed offshore activities.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Gippsland and East Gippsland Aboriginal Cooperative Ltd [393]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Gippsland Dawn Project [578]

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): EP controls
Person/Organisation requested to be consulted on this activity.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	31/03/2024	Email	Automatic response received.		
From	03/06/2024	Questionnaire	Stakeholder responded to questionnaire.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	19/06/2024	Email	Esso acknowledging questionnaire responses.		
From	19/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		

From	21/08/2024	Email	Stakeholder questions regarding Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.
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Gippsland Lakes Fishing Club [208]

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): EP controls
Stakeholder advising consultation materials to be shared with members.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Stakeholder advising consultation materials to be shared with members.		
From	28/03/2024	Email	Automatic response received.		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Gippsland Lakes Yacht Club [408]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Gippsland Skies Project [651]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.

Golden Paradise Beach Ratepayers & Residents Association Inc [581]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	10/07/2024	Email	Esso scheduling meeting.	
From	10/07/2024	Email	Stakeholder will send Esso the information they need to start setting up an Esso Introduction and Presentation.	
To	29/08/2024	Drop-in Session - In Person	Community presentation on all current activities including G&G.	

Great Eastern Offshore Wind Farm Project [650]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.	
From	14/10/2024	Email	Automatic response received.	

Gulaga and Biamanga Joint Authority [429]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Gunaikurnai Land and Waters Aboriginal Corporation [213]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	GLaWAC requesting where to direct email Esso Australia: Consultation on offshore activities.		
To	02/04/2024	Email	Esso response to GLaWAC query on where to direct email.		
To	26/04/2024	Email	Consultation on Gippsland Basin Geophysical and Geotechnical Investigations.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	23/05/2024	Meeting - Online	Meeting at GLaWAC offices to discuss current proposed and existing operational activities.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	13/06/2024	Email	Consultation on offshore activities including G&G EP.		

To	01/07/2024	Email	Consultation on offshore activities including G&G EP.
To	02/07/2024	Email	Esso sending an email to the Stakeholder to show all relevant consultation materials.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	13/08/2024	Email	Consultation on offshore activities including G&G EP.
To	26/09/2024	Email	Thank-you email (26/9/24) to stakeholder for attending the Community Information and Drop-in Session at Leongatha on 25/9/24.
From	26/09/2024	Email	Response from stakeholder noting date and time of next scheduled community information and drop-in session in Leongatha in October.
To	26/09/2024	Email	Response to stakeholder requesting links to 2023 Annual Decommissioning Report.
To	26/09/2024	Email	Response to stakeholder thanking them for registering for next community information and drop-in session at Leongatha, Thursday 24 October 2024, 5.30 pm.

Hastings Coastal Advisory Group [190]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Hewardia [205]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
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High Sea Wind Project [652]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.		

Iberdrola Australia OW 2 Project [631]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.		
From	16/08/2024	Email	Iberdrola have reviewed the information sent on G&G EP and as at this current consultation status have no issues to raise.		

Independent chair of Fishing Tribunal [138]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		

To	06/07/2024	Email	Consultation on offshore activities including G&G EP.
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Kent Offshore Wind Project [649]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.		

King Island Shire Council [430]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Lake Tyers Aboriginal Trust [395]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		

To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Lakes Entrance Fishermen Limited [17]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	30/05/2024	Meeting - In Person	Quarterly meeting to discuss current and proposed offshore activities.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	22/08/2024	Meeting - In Person	Quarterly meeting to discuss current and proposed offshore activities.		
To	25/09/2024	Meeting - In Person	Quarterly meeting to discuss current and proposed offshore activities.		

Lakes Entrance Offshore Charters [410]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Lakes Entrance Scallop Fishing Industry Association [18]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Life Saving Victoria [109]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Marine and Safety Tasmania [198]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		

To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Maritime Industry Australia Limited [199]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Maritime Union of Australia [348]

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): EP controls
Meeting scheduled and then cancelled by stakeholder.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
From	06/09/2024	Email	Stakeholder advised they would need to postpone meeting.		
To	19/09/2024	Meeting – online	Meeting with MUA.		
To	24/10/2024	Email	Follow up email with meeting notes.		

Melythina tiakana warrana Aboriginal Corporation (TAS) [431]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Member of Fishing Tribunal [137]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Mitchelson Fisheries [211]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (

			Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Navigator North Project [585]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	18/07/2024	Meeting - Online	Initial introduction meeting between Navigator North project (RES/Origin) and Esso.		
To	23/07/2024	Email	We will keep you updated of the activities you've requested.		
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.		

New South Wales Aboriginal Land Council [374]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Awabakal [433]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Bahtabah [434]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Batemans Bay [435]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Bega [436]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Birpai [601]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Bodalla [437]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
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NSW Local Aboriginal Land Council: Bunyah [604]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Cobowra [438]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Darkinjung [439]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		

To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

NSW Local Aboriginal Land Council: Eden [440]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Forster [441]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Illawarra [442]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

NSW Local Aboriginal Land Council: Jerrinja [443]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Karuah [444]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Kempsey [602]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: La Perouse [445]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Merrimans [446]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Metropolitan [447]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Mogo [448]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Nowra [449]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
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NSW Local Aboriginal Land Council: Purfleet Taree [587]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Ulladulla [450]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Aboriginal Land Council: Worimi [452]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

NSW Local Government Area / Council: Bayside [453]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Bega Valley [454]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Central Coast [455]

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): EP controls
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Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Eurobodalla [456]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Georges River [457]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Kempsey [588]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Kiama [458]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Lake Macquarie [459]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (

			Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

NSW Local Government Area / Council: Mid-Coast [460]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Mosman [461]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Newcastle [462]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: North Sydney [463]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Northern Beaches [464]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Port Macquarie - Hastings [603]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Port Stephens [465]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Randwick [466]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

NSW Local Government Area / Council: Shellharbour [467]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Shoalhaven [468]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Sutherland Shire [469]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

NSW Local Government Area / Council: Sydney [470]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Waverley [471]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Wollongong [472]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NSW Local Government Area / Council: Woollahra [473]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

NTSCORP Limited (NSW) [474]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Oil Spill Response Limited [25]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Orsted Offshore Australia 1 - Gippsland 1 and 2 Projects [586]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	16/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	16/08/2024	Email	Consultation on the Gippsland Basin Geophysical and Geotechnical Investigations Environment Plan.		

Panama II Octopus fishing vessel [123]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		

To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Parrdarrama Punggenna Aboriginal Corporation (TAS) [475]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Peels Cruises [398]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Piscari Industries Pty Ltd [212]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Port Franklin Fishermans Association [30]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Port Phillip Sea Pilots [84]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Qube [515]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #192 [192]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #389 [389]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #507 [507]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #508 [508]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #509 [509]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #510 [510]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #534 [534]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #541 [541]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #559 [559]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #560 [560]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #561 [561]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	02/09/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #562 [562]

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): EP controls
Response received supporting renewables.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
From	28/03/2024	Email	Response received supporting renewables.
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #564 [564]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #565 [565]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Relevant Person #566 [566]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #567 [567]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #568 [568]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #570 [570]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #571 [571]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #572 [572]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #573 [573]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #574 [574]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #575 [575]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #587 [590]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #594 [594]

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): EP controls
Person/Organisation requested to be consulted on this activity. Queries have been answered.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Request for consultation material to be resent.		
To	29/03/2024	Email	Resent information on consultation on offshore activities in a different format.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
From	05/08/2024	Media Advertisement	Registration to attend Sale drop-in session.		
To	06/08/2024	Email	Response to registration.		

Relevant Person #595 [595]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		

To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Relevant Person #596 [596]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #599 [599]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Relevant Person #600 [600]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		

To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Sale Game & Fishing Association [400]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Save Westernport [214]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Scallop Fishermens Association [196]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Scuba Divers Federation of Victoria (SDFV) [519]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Sea Shepherd Australia [520]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Seafood Industry Victoria [33]

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): EP controls

Esso held regular meetings with Person/Organisation throughout the consultation period and provided detailed consultation on all offshore activities including this activity including activity description, location, timing and potential impacts and risks. Person/Organisation queries have been answered.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	02/04/2024	Email	Resent information on consultation on offshore activities in amended format.	
From	02/04/2024	Email	Request for consultation material to be resent.	
From	09/04/2024	Email	Agreeing on format for consulting with representatives members.	
To	10/04/2024	Email	Confirmation on consulting with representatives members.	
From	12/04/2024	Email	Confirmation of consultation with representative's members.	
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).	
From	29/05/2024	Phone call	Phone conversation discussing current and upcoming activities.	
To	06/06/2024	Phone call	Phone call discussing current and proposed activities and follow up on Campaign 1 decommissioning stakeholder online forum.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	13/06/2024	Meeting - In Person	Quarterly meeting to discuss current and proposed offshore activities.	
To	18/06/2024	Meeting - In Person	Quarterly meeting to discuss all current and proposed offshore activities.	
To	21/06/2024	Phone call	Phone call discussing current and proposed activities and follow up on Campaign 1 decommissioning stakeholder forum held in Welshpool.	
To	01/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	11/07/2024	Email	Consultation on offshore activities including G&G EP.	
From	16/07/2024	Email	Stakeholder advising if Esso requires any information to be distributed to members as per the Engagement Agreement.	
To	16/07/2024	Email	Esso asking for the Stakeholder to share the Decommissioning Campaign #1 update with their members.	
From	16/07/2024	Email	Stakeholder asking Esso if the draft email and information sheet is ok so they can send it out to their members.	
To	16/08/2024	Email	Esso asking the Stakeholder to share the annual reminder about the PSZ's with their members.	

From	23/08/2024	Email	Stakeholder asking Esso if it is ok to send the annual reminder to be distributed with the Stakeholder's weekly member update.
To	26/08/2024	Email	Esso agreeing for the Stakeholder to send out the annual reminder of the exclusion zone with their weekly member update and asking the Stakeholder if they can be included to the distribution list.
From	27/08/2024	Email	Stakeholder will send out the reminder and happy to include Esso on the distribution list.
From	27/08/2024	Email	Stakeholder is asking Esso how the information should be sent out and Stakeholder is mentioning that they do not take responsibility for forwarding maritime or safety notifications, including exclusion zones.
From	28/08/2024	Email	Stakeholder thanking Esso for reaching back and will communicate the details for the Safety Zone.
To	28/08/2024	Email	Esso telling Stakeholder that Safety Zones are managed by NOPSEMA but Esso has an internal commitment to send an annual reminder of exclusion zones to fishermen.
From	28/08/2024	Email	The Stakeholder is letting Esso know that the link they provided did not work and reminded Esso about the Clause 1(d) of our Engagement Agreement.
To	29/08/2024	Email	Esso thanking the Stakeholder for the reminder on the Clause 1(d) of the Engagement Agreement and resent the link for the Safety Zones.
To	02/10/2024	Meeting - Online	Esso met with SIV to discuss current and proposed offshore activities and general discussion.

Seaspray Surf Lifesaving Club [402]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

SETFIA Chairman [202]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Seven Group Holdings [24]

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): EP controls
Person/Organisation requested to be consulted on this activity.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
From	19/07/2024	Questionnaire	Stakeholder responded to questionnaire.		
To	23/07/2024	Email	Esso acknowledging questionnaire responses.		

Six Rivers Aboriginal Corporation (TAS) [476]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

South East Trawl Fishing Industry Association [37]

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	Reg 34(g) (ii): EP controls
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			objection or claim and its response	
Esso held regular meetings with Person/Organisation throughout the consultation period and provided detailed consultation on all offshore activities including this activity including activity description, location, timing and potential impacts and risks. Person/Organisation queries have been answered.		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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).	
To	30/05/2024	Meeting - In Person	Quarterly meeting to discuss all current and proposed offshore activities.	
To	30/05/2024	Meeting - In Person	SETFIA / Esso quarterly consultation meeting.	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	16/08/2024	Email	Esso asking the Stakeholder to share the reminder about PSZ's to their members.	
To	17/08/2024	SMS	SMS sent to fishing fleet regarding Petroleum Safety Zones.	
To	13/09/2024	Meeting - In Person	SETFIA / Esso quarterly meeting.	
To	17/09/2024	SMS	SMS sent to Eastern fishing fleet advising of upcoming community sessions.	

Southern Shark Industry Alliance [77]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).	

To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Star of the South Wind Farm Pty Ltd (FL005) and Kut-Wut Brataualung Pty Ltd (FL006) [638]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	03/07/2024	Meeting - In Person	Meeting to discuss all current and proposed offshore activities.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	15/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	28/07/2024	Meeting - In Person	Meeting to discuss Esso current activities.		

Surfrider Foundation Australia [522]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Sustainable Shark Fishing Association [40]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

TAS Local Government Area / Council: Break O'Day [477]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: Burnie [478]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
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TAS Local Government Area / Council: Central Coast [479]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	09/07/2024	Email	Automatic response received.		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: Circular Head [480]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: Devonport [481]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (

			Appendix F-1).
From	28/03/2024	Email	Automatic response received.
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

TAS Local Government Area / Council: Dorset [482]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: Flinders [483]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: George Town [484]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

TAS Local Government Area / Council: Glamorgan-Spring Bay [485]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	

TAS Local Government Area / Council: Latrobe [486]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
From	28/03/2024	Email	Automatic response received.	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	

TAS Local Government Area / Council: Launceston [487]

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	Reg 34(g) (ii): EP controls
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			objection or claim and its response	
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).	
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).	

TAS Local Government Area / Council: Waratah-Wynyard [488]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	09/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

TAS Local Government Area / Council: West Tamar [489]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		

To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
From	11/06/2024	Email	Automatic response received.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

Tasman Council [490]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Tasmanian Aboriginal Centre [421]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Tasmanian Regional Aboriginal Communities Alliance [491]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).

Tasmanian Seafood Industry Council [41]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Tuna Australia Ltd [120]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Victoria Game Fishing Club [124]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		

To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Victorian Bays and Inlets Fisheries Association [70]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	12/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/07/2024	Email	Consultation on offshore activities including G&G EP.		

Victorian Recreational Fishing [51]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
From	25/04/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Victorian Safety Emergency Services Eastern Region [403]

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): EP controls
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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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Victorian Scallop Industry Association [52]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	25/04/2024	Email	Esso Australia: Consultation on Gippsland Basin Geophysical and Geotechnical Investigations. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Wildlife Victoria [55]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

World Wide Fund for Nature [370]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
From	02/04/2024	Email	Automatic response received.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

Yachting Victoria [111]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

*Consultation report (Summary) for Regulation 25 (1)(e) relevant persons**Australian Marine Oil Spill Centre [1]*

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (

			Appendix F-1).
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.

Gippsland Forestec TAFE [394]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		

National Native Title Tribunal (NNTT) [432]

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): EP controls
Automatic response 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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP (EMBA). Includes link to Information Bulletin #1 (Appendix F-1).		
From	28/03/2024	Email	Automatic response received.		
To	14/05/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		
From	11/06/2024	Email	Automatic response received.		
From	11/06/2024	Email	Automatic response received.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP (EMBA).		

Port of Hastings [28]

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): EP controls
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Person/Organisation requested to be consulted on this activity.			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/ from	Date	Method	Reg 24(b)(i): Summary of each response		
To	28/03/2024	Email	Consultation on offshore activities including G&G EP. Includes link to Information Bulletin #1 (Appendix F-1).		
To	11/06/2024	Email	Consultation on offshore activities including G&G EP.		
From	02/07/2024	Questionnaire	Stakeholder responded to questionnaire.		
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.		
To	23/07/2024	Email	Esso acknowledging questionnaire responses.		

Victorian Regional Channels Authority [112]

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): EP controls
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/ from	Date	Method	Reg 24(b)(i): Summary of each response	
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To	11/06/2024	Email	Consultation on offshore activities including G&G EP.	
To	06/07/2024	Email	Consultation on offshore activities including G&G EP.	

Appendix F: Sufficient Information materials

21 March 2024

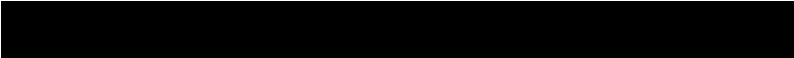
GLaWAC Consultation Pack

Energy lives here™

GLaWAC Representatives:



Esso Representatives:



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

■ STATE WATERS

■ COMMONWEALTH WATERS

■ BATHYMETRY (WATER DEPTH)

ESSO FACILITIES

--- PRIMARY PIPELINE (OIL)

— PRIMARY PIPELINE (GAS)

— SECONDARY PIPELINE

□ PLATFORM

○ SUBSEA FACILITY

▲ VALVE SITE

↓ Locations of Esso's Bass Strait facilities

The map displays the following facilities and pipelines:

- Localities:** Lakes Entrance, Loch Sport, Sale, Longford, Golden Beach, Seaspray, Dolphin (DPA), Perch (PCA), Tarwhine (TWA), Seahorse (SHA), Barracouta (BTA), Whiting (WTA), Snapper (SNA), Marlin A (MLA), Marlin B (MLB), Tuna (TNA), Kipper (KPA), West Tuna (WTN), Flounder (FLA), Fortescue (FTA), Halibut (HLA), Cobia (CBA), Cobia 2 (CBA2), Mackerel (MKA), Blackback (BKA), West Kingfish (WKF), Kingfish B (KFB), Kingfish A (KFA), Bream A (BMA), Bream B (BMB).
- Pipelines:** HLA600-Shore, SNA600-Shore, MLA500-Shore, BTA150-Shore, BTA450-Shore, TNA100-WTN, TNA200-MLA, WTN250-TNA, KPA350-WTN (North), KPA350-WTN (South), FLA250-TNA (East), FLA250-TNA (West), WTN450-MLB, MLA300-HLA600Tee, MLA150-KFB/KFA/WKF, MLA100-HLA/MKA, HLA100-FTA, FTA300-HLA, CBA300-HLA, MKA300-HLA, HLA100-CBA, MKA65-BKA, BKA200-MKA, CBA2/100-MKA (South), CBA2/100-MKA (North), KFA400-KFB, WKF300-KFA, BMA400-WKF, BMB250-BMA, TWA200-BTA, BTA65-TWA, BTA65-SHA, SHA150-BTA, BTW300-BTA450Tee, PCA/DPA300-Shore, Shore-PCA/DPA100.
- Platforms:** Seahorse (SHA), Barracouta (BTA), Whiting (WTA), Snapper (SNA), Marlin A (MLA), Marlin B (MLB), Tuna (TNA), Kipper (KPA), West Tuna (WTN), Flounder (FLA), Fortescue (FTA), Halibut (HLA), Cobia (CBA), Cobia 2 (CBA2), Mackerel (MKA), Blackback (BKA), West Kingfish (WKF), Kingfish B (KFB), Kingfish A (KFA), Bream A (BMA), Bream B (BMB).
- Valve Sites:** Golden Beach, Seaspray, Tarwhine (TWA), Seahorse (SHA), Barracouta (BTA), Whiting (WTA), Snapper (SNA), Marlin A (MLA), Marlin B (MLB), Tuna (TNA), Kipper (KPA), West Tuna (WTN), Flounder (FLA), Fortescue (FTA), Halibut (HLA), Cobia (CBA), Cobia 2 (CBA2), Mackerel (MKA), Blackback (BKA), West Kingfish (WKF), Kingfish B (KFB), Kingfish A (KFA), Bream A (BMA), Bream B (BMB).

NOTE: Some changes made to improve visibility of pipelines. Facility icons do not indicate facility size.

Thank you





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.



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.

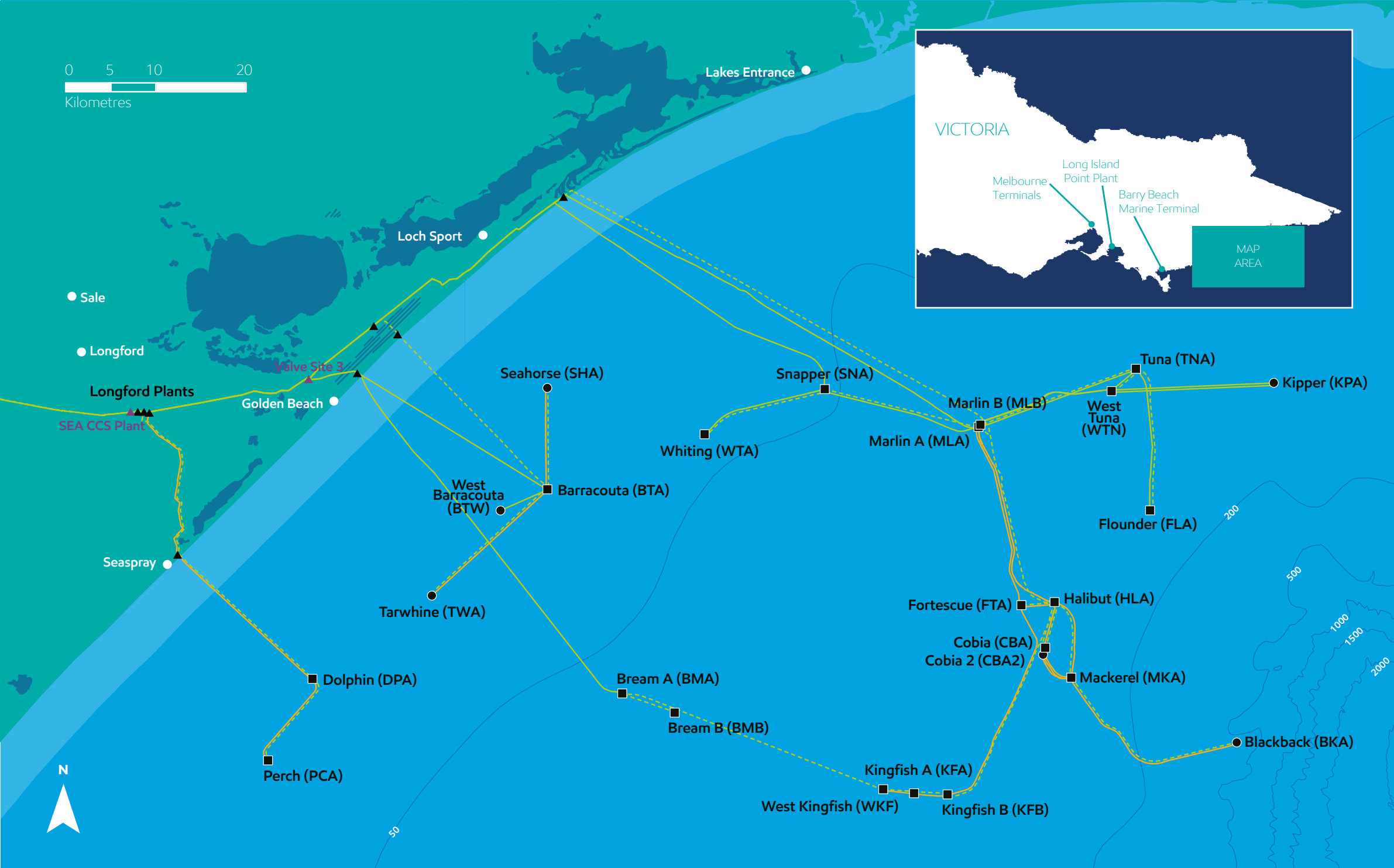
Esso’s activities may affect the environment and other values, including sea country and cultural heritage. As well as inviting community to join in our regular consultation activities, Esso would also like to welcome indigenous feedback about areas that may be sensitive to Esso’s activities and how 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

NOTE: Some changes made to improve visibility of pipelines. Facility icons do not indicate facility size.

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)

All dates current at time of publishing.

↓ Kingfish A

Esso Australia Stakeholder Consultation

Golden Beach & Paradise Beach
29th August 2024



Esso Australia – Yesterday, today and tomorrow...

In 1965 an Esso/BHP Billiton joint venture drilled Australia's first offshore well and discovered the Barracouta gas field in Bass Strait.

To date, more than four billion barrels of crude oil and around eight trillion cubic feet of gas have been produced. And our future remains bright - with Bass Strait continuing to supply vital energy to Australians for more decades to come.

Our Upstream Business

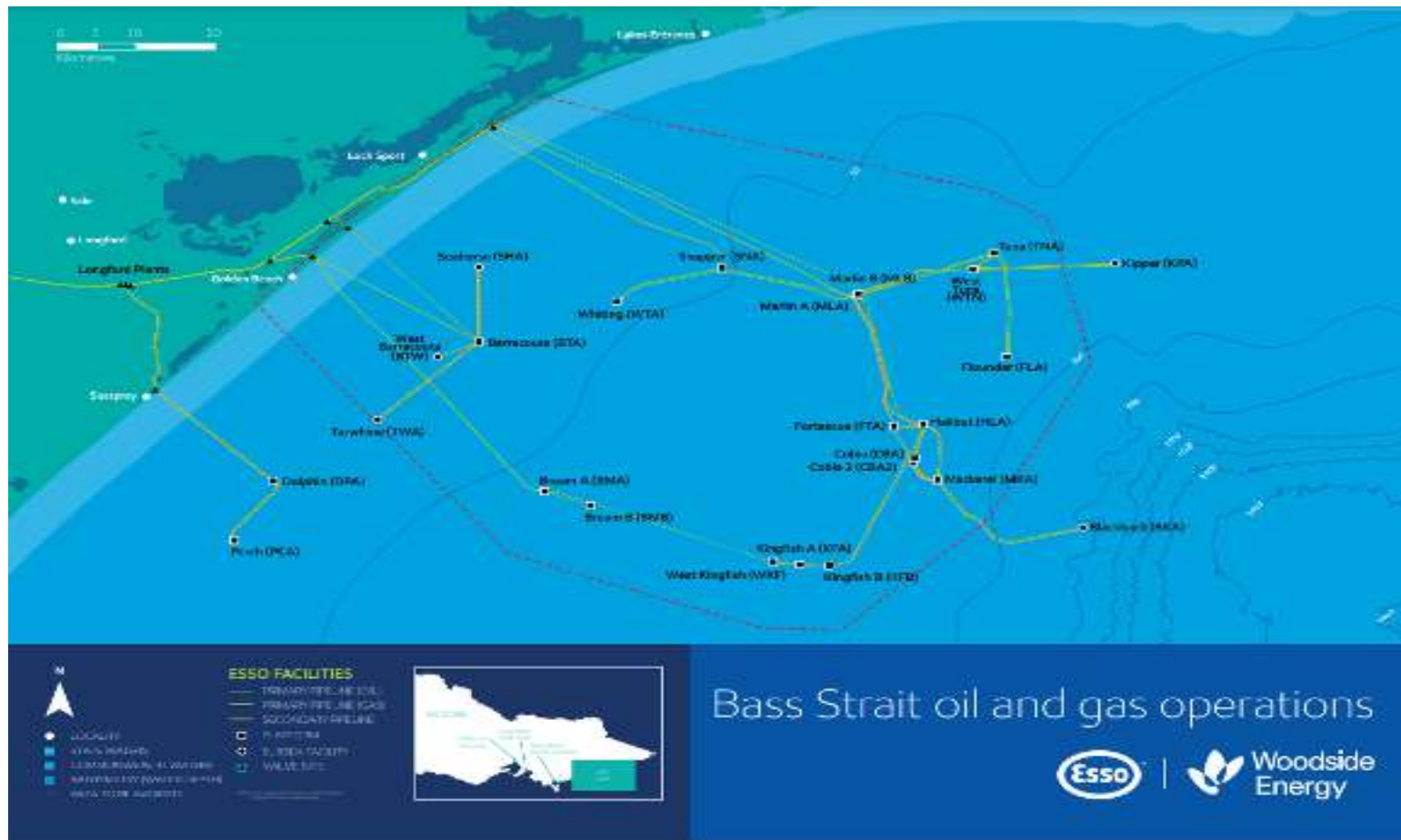
Our reliable supply of natural gas is powering Australians, providing the energy used by local manufacturers, hospitality venues, medical facilities and construction, transport and logistics firms, and supporting the countless industries who rely on their products and services.



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Esso facilities in the Bass Strait



Esso facilities in the Bass Strait include:

- 19 platforms
- ~400 wells
- 6 subsea facilities
- > 800km of subsea pipelines

Proposed Base Business activities

Jack Up Rig Well Plug And Abandonment

P&A 21 platform-based wells and five subsea wells

Kipper Subsea Drilling

Originally planned for 2020

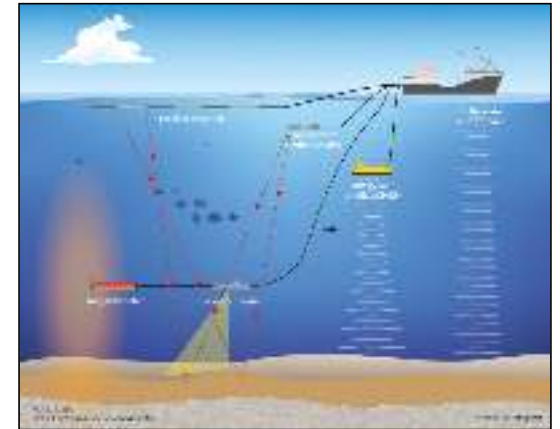
Turrun Drilling

Drilling campaign from Marlin A and Marlin B

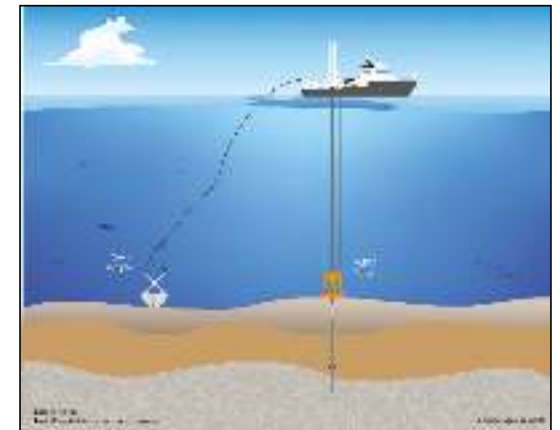
Geotechnical And Geophysical Investigations

A *geophysical* survey is the collection of geophysical data (measurements of seabed characteristics, imaging and profiling)

Geotechnical investigations involve taking shallow core samples of seabed sediment (sand, silts, clays) and underlying rock to establish geological conditions



Example Geophysical Investigation



Example Geotechnical Investigation

Decommissioning in the Bass Strait

- Some facilities have reached end of economic life
- Esso planning for the safe decommissioning of its non-producing facilities
- Working decommissioning options that balances environmental impacts and benefits with needs of community and regulatory requirements



ACTIVITIES

PRODUCTION

PRODUCTION

Production operations

Production in Bass Strait
will continue through
2030+

DECOMMISSIONING

Preparatory Decommissioning Activities

CESSATION OF PRODUCTION

Care and preservation

Well plug and abandon

Conductor pull

Facility preparation inc:

- Isolate systems/ make safe for removal
- Flushing and draining of pipelines
- Bulk piping and structural air gapping
- Systems shutdown
- Living quarter shut down

Inspection, maintenance and repair

STASIS MODE

Minimal visits

These activities are happening now.

REMOVAL ACTIVITIES

Make safe

Final lift preparation

Cut and lift

Removal, transport and
load-in

Onshore recycling and
disposal

Removal activities
(Campaign 1) expected to
take place
Q3, 2027 – Q1 2028

SURRENDER OF TITLES

Campaign #1

Campaign #1 covers up to 13 facilities with various end states:

FULL REMOVAL

2 Monotowers

REMOVAL OF TOPSIDES AND UPPER JACKET SECTIONS TO AT LEAST 55M BELOW SEA LEVEL

Up to 8 SPJs in deeper
water

REMOVAL OF TOPSIDES AND JACKET TO SEABED

Up to 2 Steel Piled Jackets
(SPJs) in shallower water

REMOVAL OF TOPSIDES ONLY

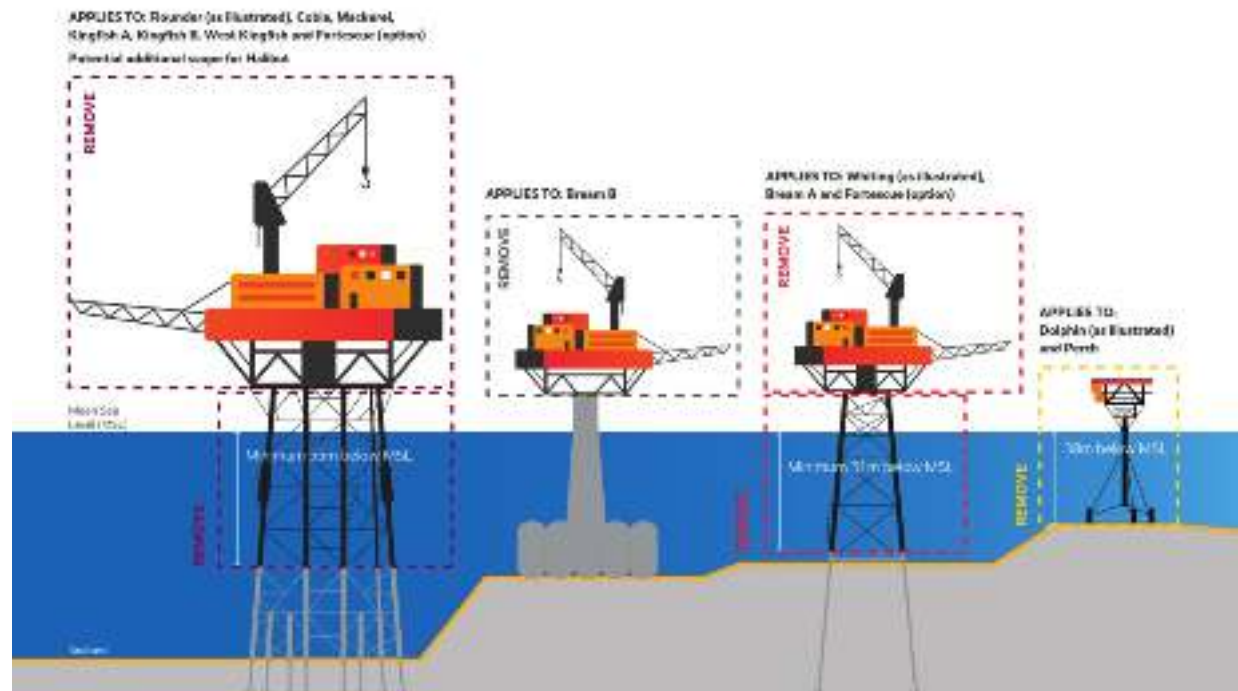
1 Concrete Gravity
Structure (CGS)

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Decommissioning - Steel Piled Jackets

- Cut the jacket and associated infrastructure to a minimum of 55m below Mean Sea Level for eight steel piled jackets in deeper water
- Cut the jacket and associated infrastructure as close as practicable to the seabed (minimising seabed disturbance) for two steel piled jackets in shallower water
- Full removal for the two monotowers, as these facilities have a gravity design base without deep set foundations.



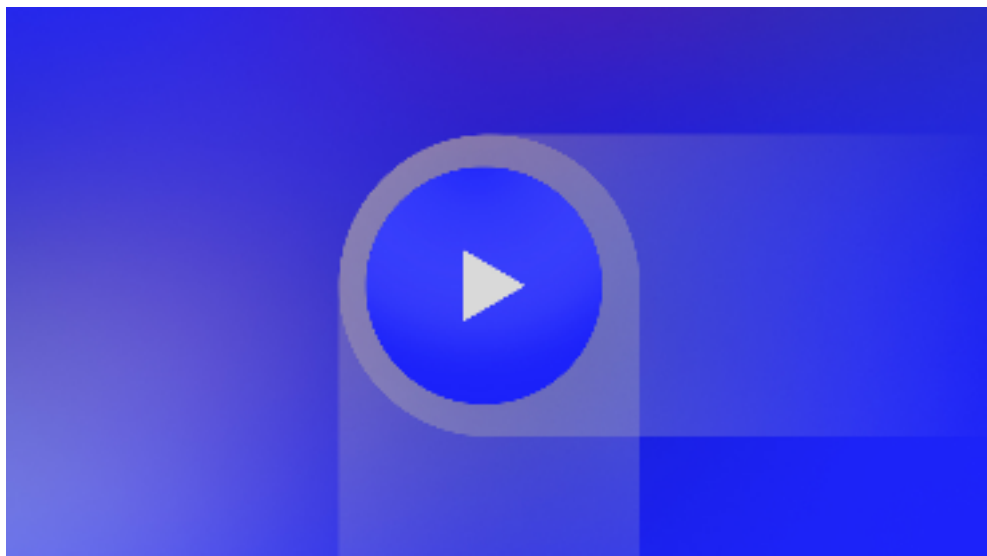
Pioneering Spirit (Allseas)

- Esso has contracted Allseas to undertake removal activities using the *Pioneering Spirit* (Heavy Lift Vessel (HLV))
- The *Pioneering Spirit* is expected to arrive in Bass Strait in late 2027 and will undertake work scopes including:
 - final topside separation
 - final jacket separation
 - topside and jacket removal
- The *Pioneering Spirit* will remain in Bass Strait for approx. 4 months

Specification	Value
Length overall	477 m (1,565 ft)
Length between perpendiculars	370 m (1,214 ft)
Breadth	124 m (407 ft)
Depth to main deck	30 m (98 ft)
Slot length	122 m (400 ft)
Slot width	59 m (194 ft)
Topsides lift capacity	48,000 t
Jacket lift capacity	SWL 20,000 t, with six lifting blocks of 5000 t each
Operating Draught	10-27 m
Maximum speed	14 knots
Displacement	1,000,000 t (at maximum draught)
Total installed power	95,000 kW
Thrusters	12 x 6050 kW azimuth
Accommodation	571 persons
Helideck	Maximum take-off weight 12.8 t, suitable for Sikorsky S-61 and S-92 helicopters
Deck cranes	5000 t, 600 t, 3 x 50 t
Installed tension capacity	4 x 500 t (4 x 1100 kips)
Pipe cargo capacity	27,000 t
Pipe diameters	From 2" to 68" OD
Classifications	100 A1 Heavy lift and heavy cargo ship, upper deck aft of frame 43 strengthened for load of 15 t/m ² ; helicopter landing area, LA, *IWS, LI, EP (B, G, N, O, P, S), ice class 1C FS, DP (AAA), PSMR* with following descriptive note: Pipelaying vessel ShipRight BWMP (S+F), split bow forward of frame 99



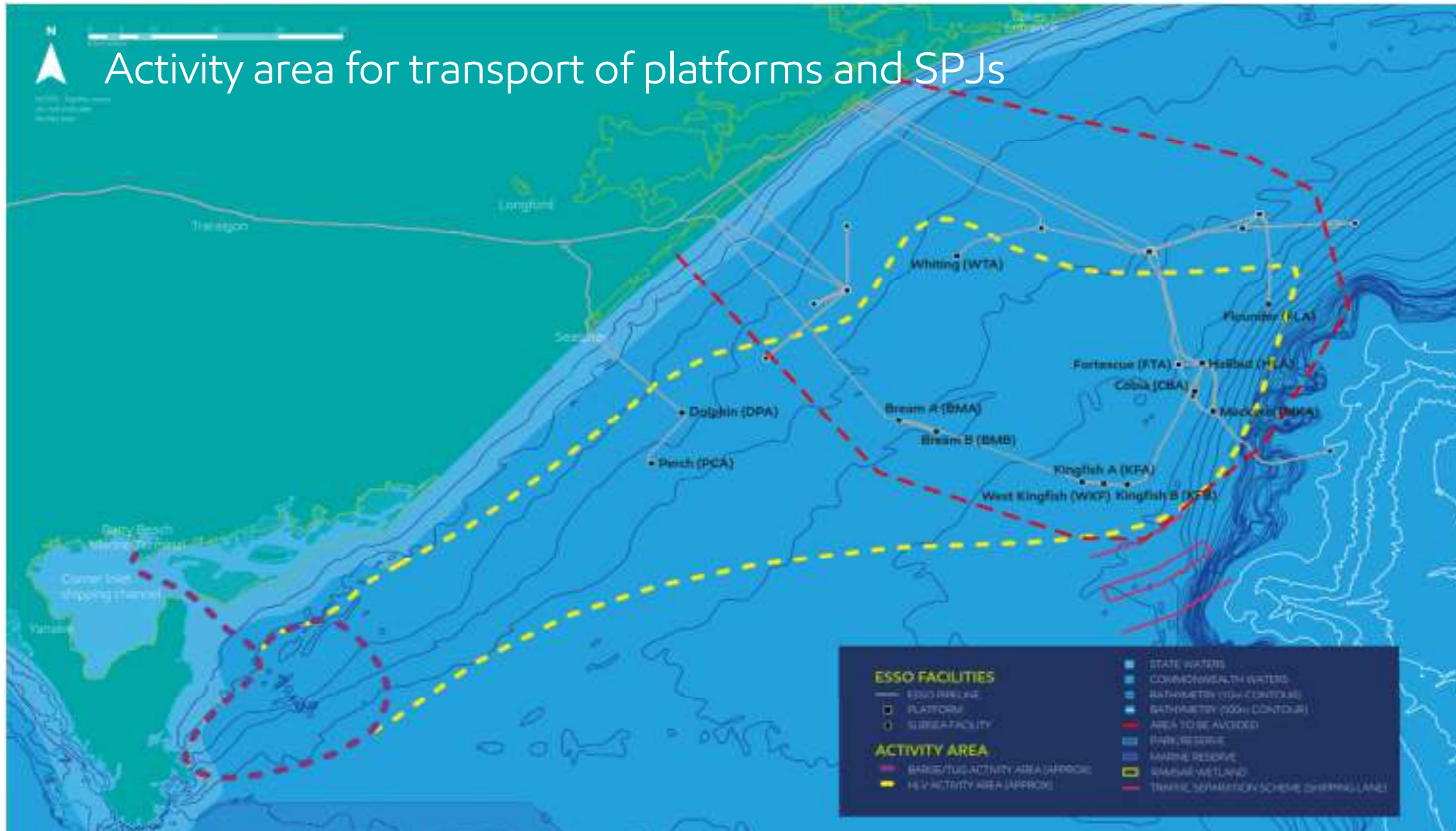
Video



Want to know more:
<https://allseas.com/equipment/pioneering-spirit-offshore-construction-vessel/>

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Onshore Reception Centre

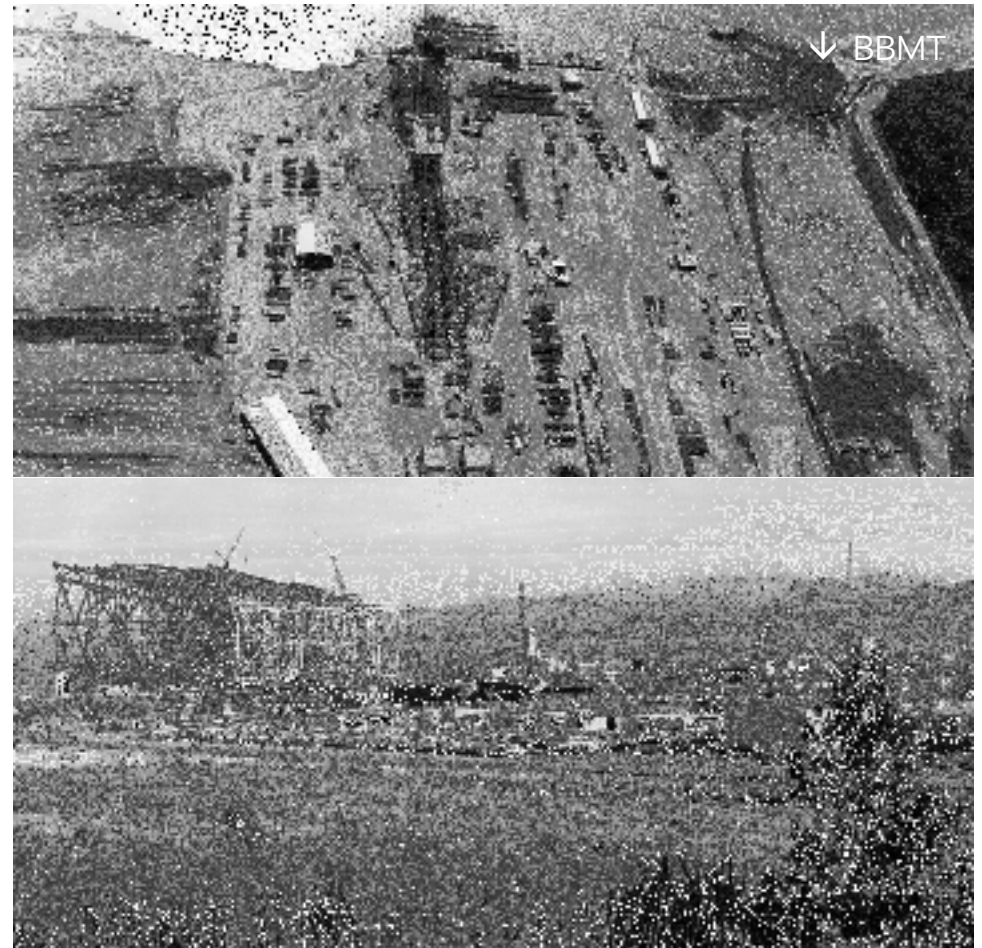
- Over 50 years, BBMT has served as the main supply depot of Esso
- BBMT identified for the Onshore Reception Centre (ORC) for transfer of removed infrastructure
- Qube Holdings will undertake the development and management of the ORC
- Recovered infrastructure will be dismantled on site and transported for recycling or disposal





Recycling and disposal

- Approx 60,000 tonnes of offshore facilities
- >80% of materials are steel
- 95% of the material to be recycled



Maintaining Our Thriving Ecosystem

Offshore [environmental surveys were conducted in 2021 and 2022](#), showed the majority of our structures are completely covered in marine life, including anemones and sponges.

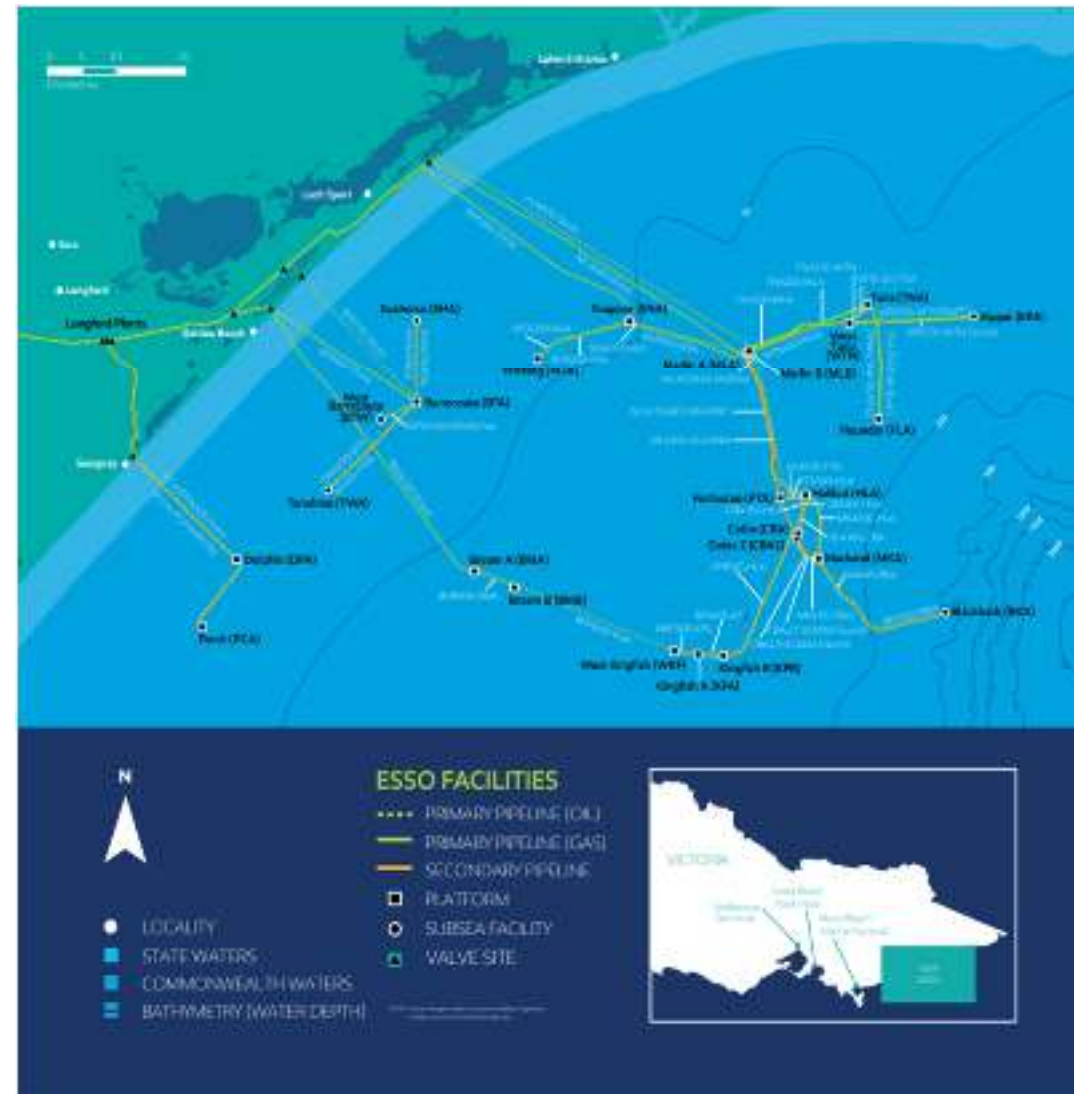
This marine life is in turn providing a habitat and a source of food for over 55 species of fish (including those fished commercially and recreationally) and larger marine fauna such as seals and sharks.



16 Southern Reef 1 cluster at 557 meters deep under the platform Cobia

Decommissioning - Pipelines

- The Bass Strait Pipeline Network consists of:
 - Approximately 840 km pipelines (650km primary pipelines and 190km secondary pipelines)
 - 105km umbilicals
 - ancillary subsea property
- Network mostly transports crude oil and gas produced offshore to Longford for processing
- Pipelines can be buried, partially buried or unburied
- Options for decommissioning still being considered:
 - Full removal (required by the Act)
 - Leave in place (if better environmental outcome)
 - Combinations of above
- Shallow buried umbilicals and flexibles will be removed.
- Early stages of consultation – further information will be provided later this year



The South East Australia Carbon Capture Project (SEA CCS)



The South East Australia Carbon Capture Project (SEA CCS)

Key Project Updates

Progress includes:

- Finalizing Front End Engineering Design Complete
- Environmental and cultural heritage surveys along the proposed onshore pipeline route
- Referrals submitted under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) and Environment Effects Act 1978 (Vic).
- Grant of a greenhouse gas assessment permit under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)

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Project look ahead

Near term focus areas for the Project include:

- Preparation of an Environment Plan Safety Case and Well Operations Management Plan to cover greenhouse gas appraisal operations under greenhouse gas titles
- Progression towards an application for a declaration of an identified greenhouse gas storage formation

Up-coming **Community Information Sessions** for the remainder of 2024 will be posted to the Consultation Hub soon. Locations to include...

Sale, Lakes Entrance, Welshpool, Foster,
Yarrum and Leongatha



Please email us at consultation@exxonmobil.com to register your attendance.

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Any Questions?

If you have more questions email:
consultation@exxonmobil.com

For more information go to:
<https://corporate.exxonmobil.com/locations/australia>

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Thank you

↓ Section of BMB250-BMA pipeline



Appendix F-1 Information Bulletin #1 (March 2024)

The ExxonMobil logo is positioned in the top left corner of the image. It features the word "Exxon" in a white, sans-serif font, followed by "Mobil" in a similar font, with a red and white checkered symbol integrated between the two words. The background of the entire image is a photograph of a large red oil tanker ship, the SKANDI DARWIN, with the name and registration number MT 6015 clearly visible on its side. Two workers in safety gear are in the foreground, slightly out of focus, looking towards the ship.

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MT 6015

SKANDI DARWIN

CONSULTATION

Bass Strait Operations

Gippsland Basin Geophysical and Geotechnical Investigations - Environment Plan Revision

INFORMATION BULLETIN
March 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.

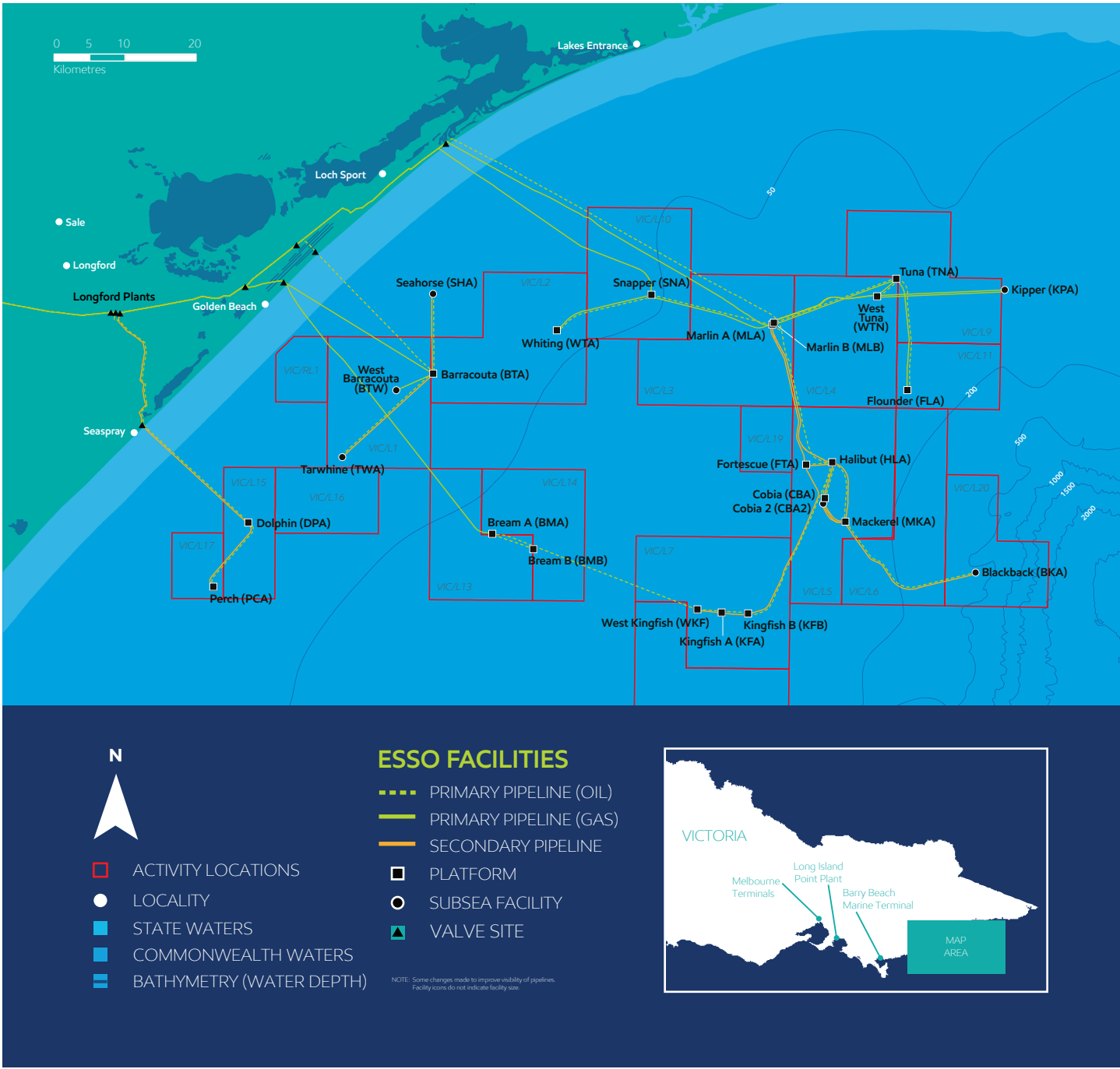
Esso is planning to continue to undertake geophysical and geotechnical (G&G) activities across multiple licence areas located within Commonwealth Waters in Bass Strait. The investigations are required to inform:

- Plug and abandonment activities
- Decommissioning
- Development around existing facilities
- Maintenance around existing facilities.

Activity location

The activity areas are located within the Gippsland Basin within the eastern Bass Strait. The investigations will be undertaken within Petroleum Production Licences VIC/L1, VIC/L2, VIC/L3, VIC/L4, VIC/L5, VIC/L6, VIC/L7, VIC/L8, VIC/L9, VIC/L10, VIC/L11, VIC/L13, VIC/L14, VIC/L15, VIC/L16, VIC/L17, VIC/L19, VIC/L20, VIC/L25 and Petroleum Retention Lease VIC/RL1.

→ Map of activity locations



Activity timing and duration

Activities described in this Environment Plan (EP) will commence upon acceptance by the Regulator noting that this is a revision to an existing EP.

Duration will vary based on whether it is a geotechnical or geophysical activity, and the scope of work to be undertaken. Geophysical activities are typically between a few days and few weeks depending on the size of the area to be surveyed. Geotechnical activities are typically a few hours and duration of the campaign will depend on the number of sites to be sampled.

Specific campaign timing and location will be provided to relevant stakeholders.

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 activities under this EP revision.

Activity description

Geophysical investigations

A geophysical survey is the collection of geophysical data (i.e. measurements of seabed characteristics, imaging and profiling) for assessment of water depths, seabed topography, seabed conditions and identification of obstructions on the seabed. Geophysical surveys will be conducted using conventional techniques including:

- Single beam echo sounder (SBES) to assess water depths – bathymetry

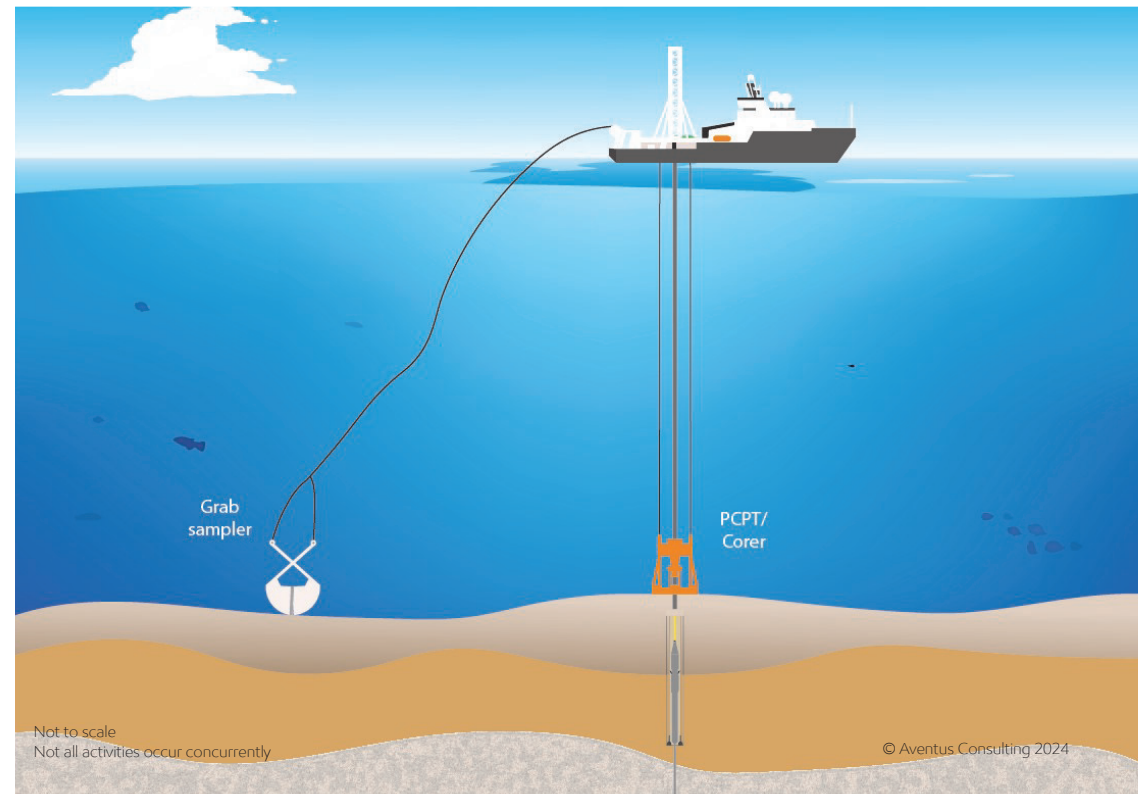
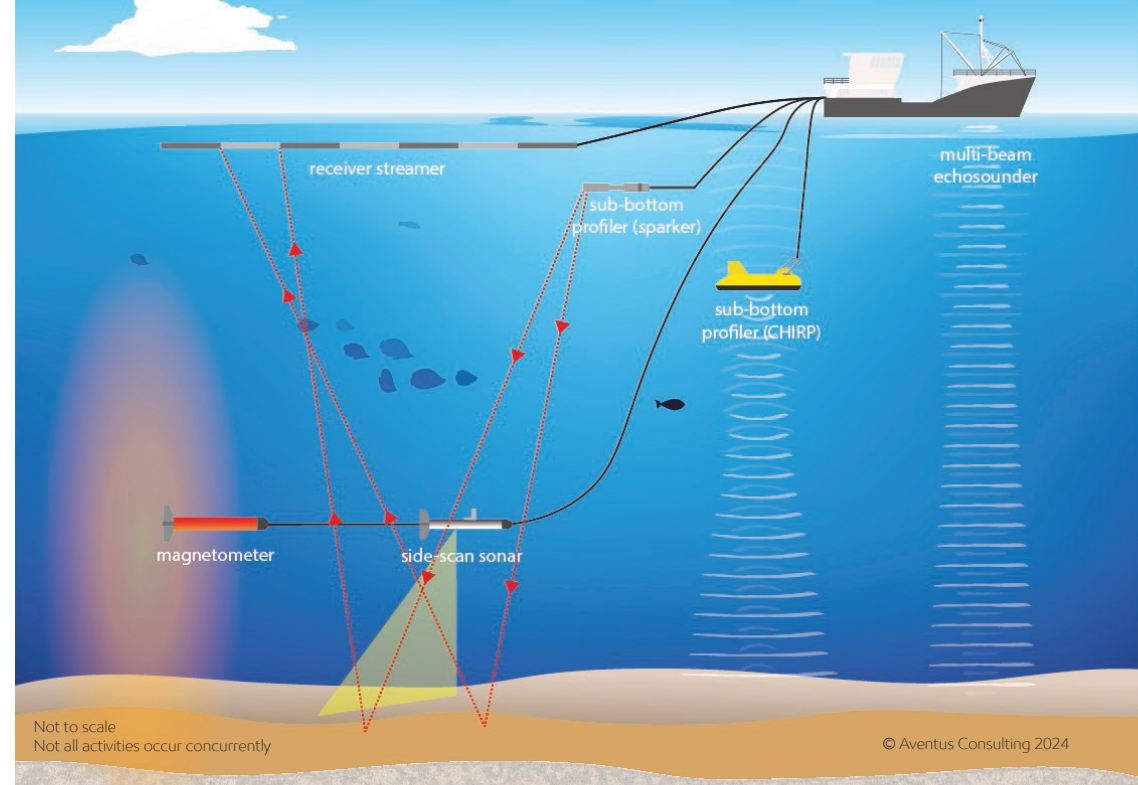
- Multi beam echo sounder (MBES) to assess water depths – bathymetry
- Side scan sonar (SSS) to detect seabed hazards such as pipelines, shipwrecks, reefs and anchors
- Sub bottom profiler (SBP) including ultra high resolution (UHR) to map the structure and thickness of the uppermost seabed sediments
- Magnetometer to detect metallic objects on or below the seabed, such as cables, anchors, chains and buried pipelines.

Geophysical equipment is deployed using a survey vessel together with autonomous underwater vehicles (AUV), remotely operated vehicles (ROV), towfish and/or catamarans. The geophysical activities are likely to be conducted using a locally-based vessel.

Geotechnical investigations

A geotechnical survey is used to assess and characterise the conditions of the seabed in nominated locations. Geotechnical investigations involve taking shallow core samples of seabed sediment (sand, silts, clays) and underlying rock to establish geological conditions. Geotechnical investigations may involve:

- Geological analysis of unconsolidated seabed sediments using grab sampling
- Geological analysis of formations below the seabed using coring
- Determination of seabed strength using pipeline end manifold (PLEM) seabed sampling, piezocone penetration testing (PCPT) and borehole sampling.



Geotechnical investigations are undertaken using a specialised vessel.

Geophysical and geotechnical investigations are commonly used in the resources industry to provide a greater understanding of seabed conditions and shallow geology.

Notice to Mariners

The location and timing of the activity will be communicated to marine vessels via a Notice to Mariners issued by the Australian Hydrographic Office and AUSCOAST warnings issued by the Australian Maritime Safety Authority.

Interaction with commercial fishing

The activities will take place within existing Commonwealth fisheries areas.

The impacts to commercial fishing should be minimal as fishers are required to avoid established Petroleum Safety Zone's in and around the Esso facilities. However, the timing of activities and the support vessel details will be further communicated to the potentially impacted fisheries closer to the time of operations.

Environment Plan

Under the OPGGS Act, before any petroleum-related activities in Commonwealth waters can commence, an EP must be accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). An existing EP is currently in-force enabling Esso to conduct G&G activities within Bass Strait. Esso is now proposing to extend this EP for another five years, and a revision to the existing EP is being prepared. The key changes are the extension to the timing of the activities and additional title areas added to cover all Esso Bass Strait License areas where the activity may occur.

The EP is a comprehensive document that describes the existing environment, including relevant persons, and how Esso will undertake the activities to avoid, minimise and manage potential environmental impacts to As Low As Reasonably Practicable (ALARP) and meet 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.



↑ Multi-purpose support vessel the *Skandi Darwin*

→ OIL POLLUTION EMERGENCY PLAN

In accordance with the OPGGS 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 (AMOSC), 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 (NEBA) is undertaken, in consultation with relevant government agencies, to determine the most appropriate spill response option.

→ 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.

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
PLANNED (ROUTINE AND NON-ROUTINE) ACTIVITIES		
Sound emissions	<ul style="list-style-type: none"> Temporary displacement of sound sensitive fauna around active vessels 	<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 If certain listed species of whales are spotted, additional controls are in place to help protect and minimise noise disturbance A 500-metre shutdown zone will be maintained around vessel and survey equipment, using crew observers Fauna observations will be undertaken by trained personnel
Lighting emissions	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Temporary and localised reduction in air quality 	<ul style="list-style-type: none"> Marine engines are maintained and air emissions will meet MARPOL 73/78 requirements
Planned discharges to the marine environment including treated sewage and food waste, treated bilge and deck wash, and cooling water and brine	<ul style="list-style-type: none"> 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 All vessels will hold a current International Oil Pollution Prevention (IOPP) Certificate Vessel contractors have scupper plugs fitted for use in overboard drains
Physical presence – seabed disturbance	<ul style="list-style-type: none"> Smothering/alteration of benthic habitats Localised and temporary increase in turbidity near the seabed 	<ul style="list-style-type: none"> Seabed grab sampling and coring activities are localised Core holes are narrow and will collapse in on themselves and small surface ‘craters’ will fill in with sediments and recolonise with benthic fauna
UNPLANNED ACTIVITIES (ACTIVITIES/INCIDENTS)		
Unplanned introduction of invasive marine species	<ul style="list-style-type: none"> Displacement of native species Habitat domination 	<ul style="list-style-type: none"> Project vessels will have a Ballast Water Management Plan and associated certificate Project vessels will comply with Australian Ballast Water Management requirements Biofouling risk assessment process will be completed Submersible equipment (ROV) will be rinsed on completion of each activity and is normally stored on deck, thereby minimising invasive marine species risk
Dropped objects	<ul style="list-style-type: none"> Localised physical impacts on benthic communities Localised physical disturbance 	<ul style="list-style-type: none"> Cargo securing manual Lifting gear is appropriately maintained Vessel inductions include training for crew on dropped object prevention

POTENTIAL IMPACTS	POTENTIAL CONSEQUENCES	CONTROL MEASURES
Unplanned interaction with marine fauna (vessel strike)	<ul style="list-style-type: none"> Injury or death of marine fauna 	<ul style="list-style-type: none"> Project 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 Grills or guards fitted to side thrusters of vessels to limit significant marine fauna ingress (where structurally possible)
Accidental release of waste	<ul style="list-style-type: none"> Physical harm to marine fauna resulting from ingestion or entanglement with solid waste (garbage) Marine pollution 	<ul style="list-style-type: none"> Project vessels will comply with MARPOL Annex V which includes measures to prevent loss of waste to the marine environment
Minor chemical spill	<ul style="list-style-type: none"> Localised increased turbidity of the water column Potential toxicity Localised (and normally temporary) smothering or pollution of benthic habitats 	<ul style="list-style-type: none"> All hazardous wastes and chemicals will be stored in a bunded area capable of containing leakage or spillage, prior to onshore disposal Safety Data Sheets (SDSs) are present on board for each hazardous chemical Shipboard Marine Pollution Emergency Plan (SMPEP) in place ROV pre and post dive inspection will be conducted to visually check for leaks Suitable spill kits in accessible locations onboard to be used immediately in the event of a chemical/hydrocarbon spill
Vessel collisions	<ul style="list-style-type: none"> Vessel impacts Spill risk Damage to/or loss of fishing equipment and/or loss of commercial fish catches (resulting in financial loss) 	<ul style="list-style-type: none"> Marine users will be informed (including Notice to Mariners) prior to the commencement of activities so they will be able to plan their activities and avoid unexpected interactions Petroleum Safety Zone established in accordance with the OPGGS Act at least one month before start of field activities Establishment of adequate navigational 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 Project vessels will comply with Marine Order 21 (Safety of navigation and emergency procedures) 2012 Project vessels will comply with Marine Order 30 (Prevention of Collisions) 2009
Accidental release of Marine Diesel Oil (MDO)	<ul style="list-style-type: none"> Temporary closure of areas (i.e. fishing grounds, beaches, etc.) Visual amenity Physical harm to marine fauna resulting from ingestion, inhalation or skin contact with oil Disturbance to reproduction of seabirds and shorebirds 	<ul style="list-style-type: none"> Shipboard Marine Pollution Emergency Plan (SMPEP) Shipboard Oil Pollution Emergency Plan (SOPEP) that will be implemented in the event of an MDO spill Oil spill response equipment is appropriately maintained No refuelling on location

Environment that may be affected

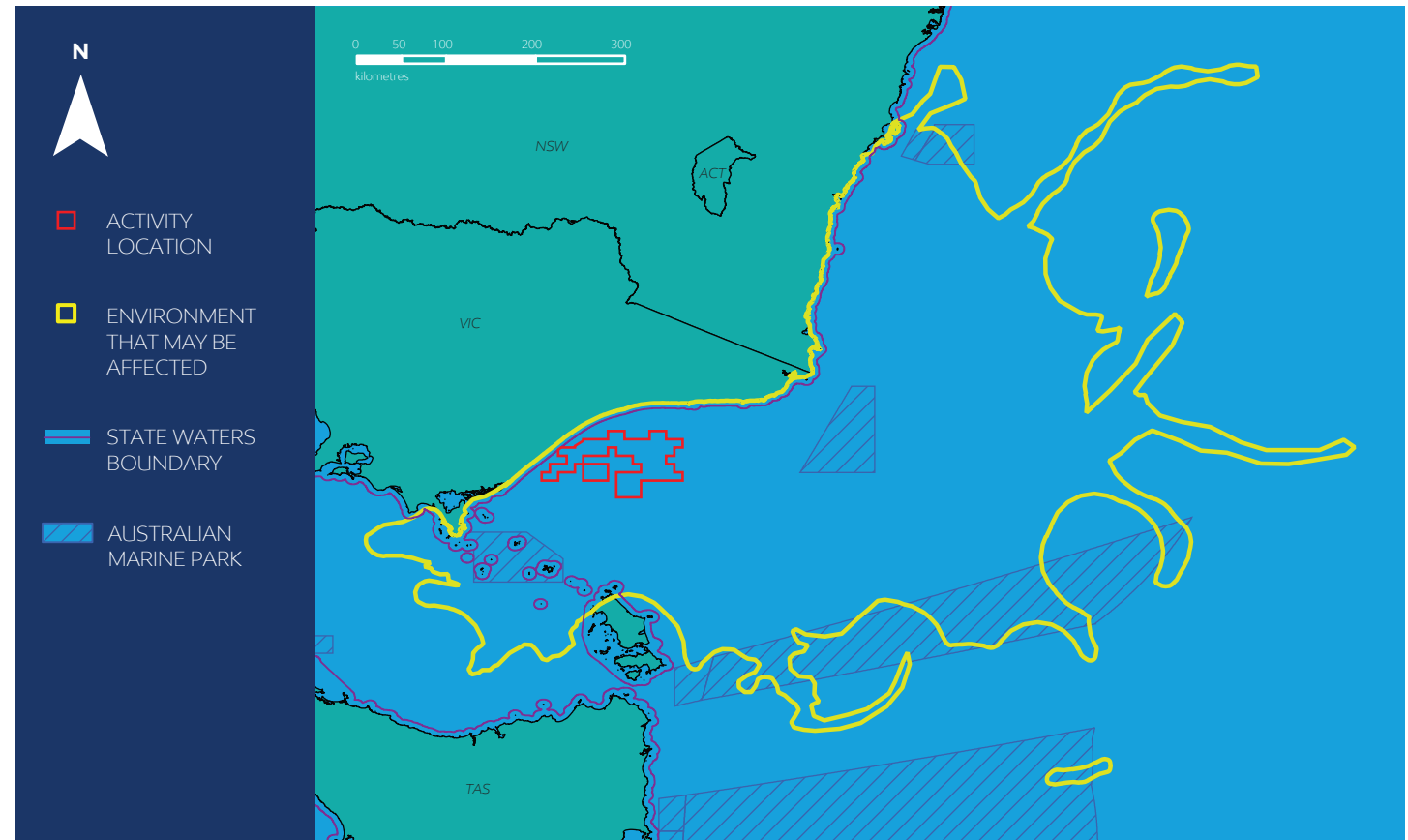
The environment that may be affected (EMBA) is the largest spatial extent where the activities could potentially have an environmental consequence (direct or indirect impact). For this activity, the broadest extent of the EMBA takes into consideration planned and unplanned activities and is determined by a highly unlikely release of marine diesel to the environment as a result of a vessel collision.

The EMBA represents 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. This area takes into account the merged areas of many possible paths which a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release. This means that in the highly unlikely event a hydrocarbon release does occur, the entire EMBA will not be affected. The specific part of the EMBA that is affected can only be known at the time of the release.

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 worst-case credible spill from a vessel collision at the Perch, West Kingfish, Barracouta, Halibut and Kipper facilities.

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 are seeking your feedback as we develop the revised Bass Strait G&G 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 assessment 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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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 G: Advertisement materials



Esso's oil and gas facilities in Bass Strait



An **ExxonMobil** Brand

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is committed to operating and decommissioning its' Bass Strait offshore facilities safely and effectively.

Community Drop-in

If you'd like to know more about the following:

- Pipeline Decommissioning
- Steel Pile Jacket Decommissioning
- Kipper Drilling
- Turrum Drilling
- Geophysical and Geotechnical Environment Plans,

the Esso Consultation Team will be hosting a community drop in at Lakes Entrance:

When: Thursday 29 February 2024

Where: The Bellevue Hotel, Lakes Entrance

Time: Between 5.00 pm - 6.30 pm

There will be maps of the facilities and infrastructure, brochures about the activities, and a friendly consultation team available to answer your questions.

Please email us at consultation@exxonmobil.com to register your attendance.

Contact us by email or phone

If this time doesn't work for you, please feel free to contact us to ask a question, raise a concern or register your interest to be involved by emailing us at consultation@exxonmobil.com or by phone: 03 9261 0244

Please connect us with other interested people

If there is anyone you know who may be interested in our activities, we encourage you to share this information with them.

To find out more information

For more information about Esso's activities and projects, please go to the Esso Consultation Hub at:



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

Like to be consulted about these activities?

Please fill in the Esso Consultation Questionnaire in the Esso Consultation Hub to let us know if you'd like to be consulted and any questions or feedback you may have.



Esso's oil and gas facilities in Bass Strait



An ExxonMobil Brand

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is committed to operating and decommissioning its' Bass Strait offshore facilities safely and effectively.

In planning for these activities, Esso is required under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* to prepare an Environment Plan about the risks and impacts these activities may have on the environment.

Additionally, Esso is required to identify and consult with relevant persons whose functions, interests, or activities may be affected by one or more of Esso's proposed offshore activities.

Community Drop-in

If you'd like to know more about Environment Plans for the following:

- Pipeline Network Decommissioning
- Steel Pile Jacket Decommissioning
- Jack Up Rig Plug and Abandonment
- Kipper Sub-Sea Drilling
- Turrum Drilling
- Gippsland Basin Geophysical and Geotechnical Investigations
- South East Australia Carbon Capture & Storage Project

The Esso Consultation Team will be hosting a community drop in between 5.00 pm and 6.00 pm on:

- **Wednesday, 29 May 2024** at The Criterion Hotel, Sale, and
- **Thursday, 30 May 2024** at Bellevue on the Lakes, Lakes Entrance

Please email us at consultation@exxonmobil.com to register your attendance.

Contact us by email or phone

If these dates and times don't suit, please feel free to contact us via email at consultation@exxonmobil.com to ask a question, raise a concern or register your interest to be consulted, or by phone on 03 9261 0000.

Please connect us with other interested people

If there is anyone you know who may be interested in our activities, we encourage you to share this information with them.

To find out more

For more information about Esso's activities and projects, please go to the Esso Consultation Hub at <https://www.exxonmobil.com.au/community-engagement/local-outreach/consultation-hub> or hover and click over the QR Code below to take you to the link:



Like to be consulted about these activities?

Please fill in the [Esso Consultation Questionnaire \(sli.do\)](#) in the Esso Consultation Hub to let us know if you'd like to be consulted or have any questions or feedback.

Your feedback and our response will be included in the relevant Environment Plan and submitted to the regulator, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), for acceptance.



Esso's oil and gas facilities in Bass Strait



An **ExxonMobil** Brand

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is committed to operating and decommissioning its' Gippsland and Bass Strait facilities safely and effectively.

In planning for these activities and in accordance with the regulations, Esso will prepare application documentation e.g. Environment Plans about the risks and impacts these activities may have.

Community Drop-in

If you'd like to know more about activity plans for the following:

- Steel Pile Jacket Decommissioning
- Jack-Up-Rig Well Plug and Abandonment
- Kipper - Sub-Sea Drilling
- Turrum Phase 3 Drilling
- Gippsland Basin Geophysical and Geotechnical Investigations
- South East Australia Carbon Capture & Storage (SEA CCS) Project
- Bream Greenhouse Gas Appraisal Environment Plan (SEA CCS)
- Pipeline Network Decommissioning

The Esso Consultation Team will be hosting community drop-ins between 5:00pm and 6:00pm on:

Wednesday, 21 August 2024 at The Criterion Hotel, Sale, 90 MacAlister Street

Thursday, 22 August 2024 at Off The Wharf café, Bullock Island, Lakes Entrance

Tuesday, 27 August 2024 at the Welshpool Memorial Hall, 49 Main Street, Welshpool

Wednesday, 28 August 2024 at Manna Gum Community House, 33 Station Street, Foster

To register your attendance, please email us at: consultation@exxonmobil.com

If these dates and times don't suit, please contact us at consultation@exxonmobil.com or by phone on 03 9261 0000.

Like to be consulted about these activities?

Esso is working to identify and consult with relevant persons [stakeholders] whose functions, interests, or activities may be affected by one or more of Esso's proposed activities.

Please fill in the [Esso Consultation Questionnaire \(Slido\)](#) in the Esso Consultation Hub to let us know if you'd like to be consulted or have any questions or feedback.

Please refer to the NOPSEMA brochure *Consultation on offshore petroleum environment plans* ([link](#)) to understand more about consultation on offshore petroleum environment plans assessed under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023*.

Your feedback and our response will be included in the relevant regulatory application documentation and submitted to the regulator.

Please connect us with other interested people

If there is anyone you know who may be interested in our activities, we encourage you to share this information with them.

To find out more information

For more information about Esso's Decommissioning activities and other projects, please go to the Esso Consultation Hub at:



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



Esso's decommissioning of platforms in Bass Strait

Esso Australia Pty Ltd (Esso), a wholly owned subsidiary of ExxonMobil Australia Pty Ltd, is committed to operating and decommissioning its' Gippsland and Bass Strait facilities safely and effectively.

After delivering energy to Australia for over 50 years, many of the Bass Strait oil fields are now reaching the end of their productive life. As planning for decommissioning progresses, Esso is focused on safely shutting-down non-producing facilities and ensuring they stay safe throughout the entire decommissioning process.

Community Information Session and Drop-in

If you'd like to know more about activity plans for **Decommissioning of platforms and pipelines in Bass Strait**, the Esso Consultation Team will be hosting a community information session and drop-in at the following locations:

Wednesday 25 September 2024 - Welshpool

Welshpool Memorial Hall
49 Main Street, Welshpool
10.00 am – 1.00 pm

Wednesday, 25 September 2024 - Leongatha

South Gippsland Trade Skills Alliance (SGBLLEN)
71 Ogilvy St., Leongatha
3.00 pm – 7.00 pm

Thursday, 26 September 2024 - Foster

Manna Gum Community House
33 Station Street, Foster
3.00 pm – 7.00 pm

A presentation about decommissioning activities will be provided at 11.00 am for the AM sessions and 3.30 pm and 5.30 pm for the PM sessions. We encourage you to come along and ask questions or to raise any concerns you may have.

To register your attendance, please email us at: consultation@exxonmobil.com

If these dates and times don't suit, please contact us at consultation@exxonmobil.com or by phone on 03 9261 0000.

The Esso Consultation Team will also be available to discuss all current activities, including:

- Bass Strait Decommissioning
- Jack-Up-Rig Well Plug and Abandonment



An **ExxonMobil** Brand

- Gippsland Basin Geophysical and Geotechnical Investigations
- Kipper - Sub-Sea Drilling
- Turrum Phase 3 Drilling
- South East Australia Carbon Capture & Storage (SEA CCS) Project
- Bream Greenhouse Gas Appraisal Environment Plan (SEA CCS)

Like to be consulted about these activities?

Esso is working to identify and consult with relevant persons [stakeholders] whose functions, interests, or activities may be affected by one or more of Esso's proposed activities. Please fill in the [Esso Consultation Questionnaire \(sli.do\)](#) in the Esso Consultation Hub to let us know if you'd like to be consulted or have any questions or feedback.

Please refer to the NOPSEMA brochure [Consultation on offshore petroleum environment plans brochure.pdf \(nopsema.gov.au\)](#) to understand more about consultation on offshore petroleum environment plans assessed under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023*

Your feedback and our response will be included in the relevant regulatory application documentation and submitted to the regulator.

Please connect us with other interested people

If there is anyone you know who may be interested in our activities, we encourage you to share this information with them.

To find out more information

For more information about Esso's activities and other projects, please go to the Esso Consultation Hub at:



<https://corporate.exxonmobil.com/locations/australia/our-approach>

APPENDIX H: EPOs, EPSs, controls and measurement criteria

Table H-1 Environmental performance – Activities

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
Physical presence – Seabed disturbance	Change in habitat, smothering and change in water quality.	1	Avoid physical damage to the seabed and sensitive habitats (including benthic habitats and assemblages and demersal fish)	CM3: Chemical Discharge assessment process	1	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.
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 survey activities such that they are able to plan their activities and avoid unexpected interference.	CM36: Pre-start notifications	2	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.
					3	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.
					4	Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.	Minutes of engagement forums confirm upcoming activities discussed.
					5	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. 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 (August 2024).	SMS updates are recorded in the Stakeholder Database. Minutes of meetings
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	6	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.
		4	Food waste discharges comply with MARPOL Annex V requirements.		7	Vessels are compliant with MARPOL Annex V as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
Sound emissions	Injury to fauna and change in fauna behaviour.	5	There is no injury (TTS and PTS) or displacement from foraging, aggregation, calving/breeding or migrating grounds in cetacean BIAs from sound emissions. No injury, harm or interference to cetaceans from sound emissions during geotechnical vessel DP operations and geophysical surveying.	CM8: Vessel Master	8	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: <ul style="list-style-type: none">• Caution zones - vessels will not knowingly travel faster than 6 knots within 300m of an adult whale or 150m of an adult dolphin• No approach zone - vessels will not knowingly get closer than 100m of a whale or 50m 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.
				CMP26: Fauna observations (will apply to both geophysical and geotechnical operations unless otherwise stated)	9	Environmental awareness induction will be provided to vessel crew prior to start of the activity regarding their EPBC Act Policy Statement 2.1 Part A obligations. This includes: <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.• 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.	Induction records. Daily reports confirm recordings of cetacean sightings.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
						<ul style="list-style-type: none">Location of binoculars available to Watchkeepers. <p>Note if there is any uncertainty on species type the precautionary principle applies.</p>	
					10	A.3.1: Pre start-up procedure <ul style="list-style-type: none">Pre-start visual observations for 30 minutes.If a whale is observed during the pre-start observations, delay start up for 30 minutes. <p>If no whales are observed, activate acoustic equipment (soft start is not possible on the MBES, SSS or SBP) or commence DP operations.</p>	Daily operations reports verify procedure was followed as required.
					11	A.3.4: Operations procedure – geophysical investigations only <ul style="list-style-type: none">If a whale is observed within the shutdown zone of the source (500m), the geophysical equipment will be shut down.Acoustic equipment can be reactivated after the whale has been observed to move outside the low power zone or if the whale has not been sighted for 30 minutes.	Daily operations reports verify procedure was followed as required.
					12	A.3.4: Operations procedure – geotechnical investigations only <ul style="list-style-type: none">If a whale is observed within the observation zone of the source (7.82km), DP will be shutdown (if safe to do so See CMP).DP can recommence after the whale has been observed to move outside the 7.82km observation zone or if the whale has not been sighted for 30 minutes.	Daily operations reports verify procedure was followed as required.
					13	A.3.6: Night-time and low visibility procedure – geophysical investigations only <ul style="list-style-type: none">Wherever practicable, commence geophysical operations during daylight hours.	Daily operations reports verify procedure was followed as required.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
						<ul style="list-style-type: none">Geophysical operations will not commence if there have been 3 or more whale-instigated shutdowns in the 3 hours preceding sunset and/or low visibility occurring.Geophysical operations will not commence or continue if a PBW/SRW has been observed within the 500m shutdown zone 30 minutes prior to sunset and/or low visibility occurring.	
					14	Esso will report cetacean sightings online to the DCCEEW within 2 months of activity completion (through the online Cetacean Sightings Application where possible or via email).	Transmittal of sighting records are available to verify reports were made.
					15	<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 observationsVessels 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 always 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,	Watchkeeper certificates of competency Vessel Crew MFO training records Esso Pre-hire assessment records Esso Vessel Inspection records

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
						<div>including understudy time on watch on the bridge.</div> <ul style="list-style-type: none">All vessel operators are required to maintain 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.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 WatchkeepersMarine megafauna identification charts are posted onboard.	
				CM18: PMS	16	Engines and thrusters are maintained in accordance with manufacturer’s instructions via the Planned Maintenance System (PMS) to ensure they are operating efficiently.	PMS records verify that engines and thrusters are maintained to schedule.
				CMP33: Adaptive Whale management procedure PBW and SRW (Geotechnical investigations only)	17	<div>The following adaptive whale management procedure (for PBW and SRW) will be implemented for the activity (regardless of activity timing):</div> <ul style="list-style-type: none">Pre-activity vessel-based survey – while en-route to the activity area, the Vessel Master, dedicated MFO (watchkeeper) and crew onboard the geotechnical vessel will maintain watch for PBW and SRW when approaching or in the observation zone (i.e. 7.82km radius behavioural EMBA).Pre-activity vessel survey - if PBW or SRW have been observed, the geotechnical vessel is not permitted to commence DP operations on location until there have been no PBW or SRW sightings for 30 minutes or the whale/s have been observed leaving the observation zone.Geotechnical DP operations (daytime) – the dedicated MFO maintains continuous	Daily reports contain information on PBWs and SRW sightings (and other cetaceans), and actions taken as a result of sightings are consistent with the adaptive management procedure requirements CMP33.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
						<p>observations for PBW and SRW while it is on DP within the observation zone.</p> <p>If a PBW or SRW is sighted in the observation zone:</p> <ul style="list-style-type: none">• The geotechnical vessel will move outside the observation zone or cease DP operations if safe to do so• If not safe to do so - Geotechnical vessel to adjust heading to reduce thrust to the extent possible for the safe operation of the vessel until the whale has moved beyond the observation zone or has not been sighted for 30 minutes• If already using DP and it is safe to do so DP operations will be ceased until PBWs/SRWs have not been observed for a continuous 30 minutes within the observation zone.• the geotechnical vessel will not commence or continue DP operations unless PBWs/SRWs have not been observed for a continuous 30 minutes within the observation zone. <p>Night-time or low visibility DP operations:</p> <ul style="list-style-type: none">• The geotechnical vessel will not commence or continue DP operations if there have been 3 or more PBW or SRW instigated shutdowns in the 3 hours preceding sunset and/or low visibility occurring.• If a PBW or SRW is observed within the observation zone in the 30 minutes preceding sunset or during low visibility, the geotechnical vessel will not commence or continue DP operations until daylight hours or visibility improves to confirm the whale is no longer in the observation zone.	

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
						Note if there is any uncertainty as to the species of whale, the precautionary principle will apply and the adaptive management plan process will be followed.	
					18	During SRW reproduction season (May – October) no geotechnical operations will be undertaken outside of the adjusted activity area as per Figure 6-7.	EP Compliance audits prior to campaign confirm no Geotechnical activities outside of the adjusted activity area from May to October.
Light emissions	Change in fauna behaviour.	7	Lighting will be limited to that required for safe navigation and work requirements.	CMP30: Lighting will be limited.	19	Lighting will be limited to that required for safe navigation and work requirements, with unnecessary lighting minimised. Lighting is directed to working areas (rather than overboard).	Inspection confirms light spill to sea is minimised, except where required for safe work/navigation.
Planned discharge – Treated bilge water and deck drainage	Change in water quality.	8	Deck drainage discharges comply with MARPOL Annex V requirements.	CM9: Class certification	20	Vessels are compliant with MARPOL Annex V as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
		9	Bilge discharges from vessels comply with MARPOL Annex I requirements.	CM9: Class certification	21	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.	10	Fuel combustion equipment complies with the requirements of MARPOL Annex VI.	CM9: Class certification	22	Vessels are compliant with MARPOL Annex VI as appropriate to vessel class.	Vessels have class certification verified and issued by IACS member.
Aspects of unplanned events							
Physical interaction – Marine fauna	Injury/mortality to fauna.	11	No injury or death of megafauna resulting from vessel strike.	CM8: Vessel Master	23	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 300m of a whale or 150m of a dolphin vessels will not knowingly get closer than 100m of a whale or 50m 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.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
				CMP26: Fauna observations	24	<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 always 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 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.• 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>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 No.	EPO	Control	EPS No.	EPS	Measurement criteria
Physical presence - Introduction of IMS	Change in ecosystem dynamics.	12	No introduction and establishment of IMS.	CM23: Ballast Water Management Plan	25	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) (Resolution MEPC.306(73), 2018).	Induction attendance list verify crew are aware of these measures.
				CM24: Ballast Water Management Certificate	26	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	27	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	28	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	29	Vessel Master to adhere to Australian ballast water requirements and BWM Convention.	Ballast water records show location of ballast water uptake and discharge.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
				CM26: Invasive Marine Species Risk Assessment Procedure	30	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	31	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 – Dropped objects	Change in habitat. Change in water quality.	13	No dropped objects which result in disturbance of benthic habitat.	CMP10: Crane handling and transfer procedures	32	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	33	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	34	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.
Accidental release –Waste	Injury/mortality to fauna and change in habitat.	14	No unplanned overboard release of waste.	CM9: Class certification	35	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	36	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.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
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	37	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	38	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: PMS	39	Vessel and equipment is maintained to prevent any leaks or LoC	Vessel maintenance records
				CM22: Remotely Operated Vehicle IMCA Audit	40	ROV installation inspected against IMCA guidelines.	Audit report developed and corrective action(s) managed in accordance with IMCA category rating
				CMP14: Bunding	41	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.
					42	Chemicals and oils stored on deck are stored within banded areas.	Inspection records demonstrate that chemicals and oils stored on deck are stored within banded areas.
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.	16	No unplanned release of marine diesel oil (MDO) to the marine environment from support vessel collision.	CM20: Shipboard Marine Pollution Emergency Plan	43	MARPOL Annex I and MARPOL Annex II specifically requires that a SMPEP (or equivalent, according to class) is in place.	Vessel have SMPEP in place.
				CM18: PMS	44	Vessel Navigation and safety equipment maintained to prevent collisions	Vessel Maintenance records.
				CM28: Activity Specific Operating Guidelines/Critical Activity Mode procedures	45	ASOG (or Well Specific Operations Criteria)/Critical Activity Mode procedures developed to IMCA standards.	Implementation procedures signed by Vessel Master and available for use.
				CM29: Vessel dynamic positioning system	46	All 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.
					47	Watchkeepers in charge of watch hold DP certification.	Watchkeepers' DP certificates available.
				CM36: Pre-start notifications	48	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.
					49	Commercial Fisheries are notified of activities via the ongoing quarterly engagement forum.	Minutes of engagement forums confirm upcoming activities discussed.

Aspect	Impact	EPO No.	EPO	Control	EPS No.	EPS	Measurement criteria
			Minimise the impact on the environment of an MDO spill.		50	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 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 (August 2024).	Text message records. Minutes of meetings
		17		CM20: Shipboard Marine Pollution Emergency Plan	51	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.
				CM12: Oil Pollution Emergency Plan	52	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)	53	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.

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.	18	Esso IMT.	54	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.	Capability is demonstrated during test/drill and is documented in test/drill report. Training records.
			55	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.

EPO		Control	#	EPS	Measurement criteria
			56	A minimum of 4 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
			57	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
			58	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
		Agreement in place with AMOSC, OSRL and OSMP service provider to facilitate access to trained personnel.	59	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 provide
		ExxonMobil maintains agreement with The Response Group and Ambipar Response	60	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.	61	Offshore IMT members participate in scheduled drills and exercises.	Exercise record
Source control equipment is available when required to prevent further uncontrolled release of hydrocarbons into the marine environment.	17	Agreements in place with ROV specialist.	62	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.	63	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).
		Memorandum of Understanding with AEP.	64	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.	18	Helicopter fleet.	65	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.	66	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.	67	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.	68	Current agreement states additional vessels will be available when requested.	Agreement document.

EPO		Control	#	EPS	Measurement criteria
		Agreement with AMOSC for trajectory modelling.	69	Trajectory modelling is through AMOSC within <4 hours of service request.	Agreement document.
		Tracking buoys.	70	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.	71	Current agreement with satellite imagery provides 24/7 emergency response support.	Agreement document.
		Esso initial response sampling kits.	72	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.
		Agreement with service provider for monitoring and sampling.	73	Monitoring and sampling service provider has capability to implement the Bass Strait OSMP.	Annual capability review.
Equipment and personnel available to support shoreline protection and clean-up when requested to reduce oil impact on shoreline environmental sensitivities.	19	Agreement with third-party Bass Strait OSMP-implementation consultant.	74	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.	75	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.	76	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.	77	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.
		Annual assurance assessment of AMOSC capabilities.	78	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
		Personnel hiring agreements.	79	Current agreements in place with labour hiring companies.	Agreement documents.
		Agreement with waste management contractor.	80	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.	81	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.

EPO		Control	#	EPS	Measurement criteria
Equipment and personnel to support oiled wildlife response are available when requested to monitor, evaluate and reduce environmental impact on fauna.	20.	Agreement in place with AMOSC.	82	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.	83	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
		Agreement in place with OSRL.	84	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.	85	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.	86	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.	21.	Annual review of agreement with third-party suppliers for provision of vessels.	87	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 meet standard. Capability testing conducted and recorded.
		Agreement in place with AMOSC.	88	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.	89	Response capabilities maintained per AMOSC Service Level Statement.	Annual assurance assessment report.
		Agreement with waste management contractor.	90	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.	91	Current agreements in place with labour hiring companies.	Agreement documents.
		Agreement with contractor for heavy plant equipment.	92	Current agreement in place with contractor for heavy plant equipment. Equipment is available for deployment within 48 hours.	Agreement documents.